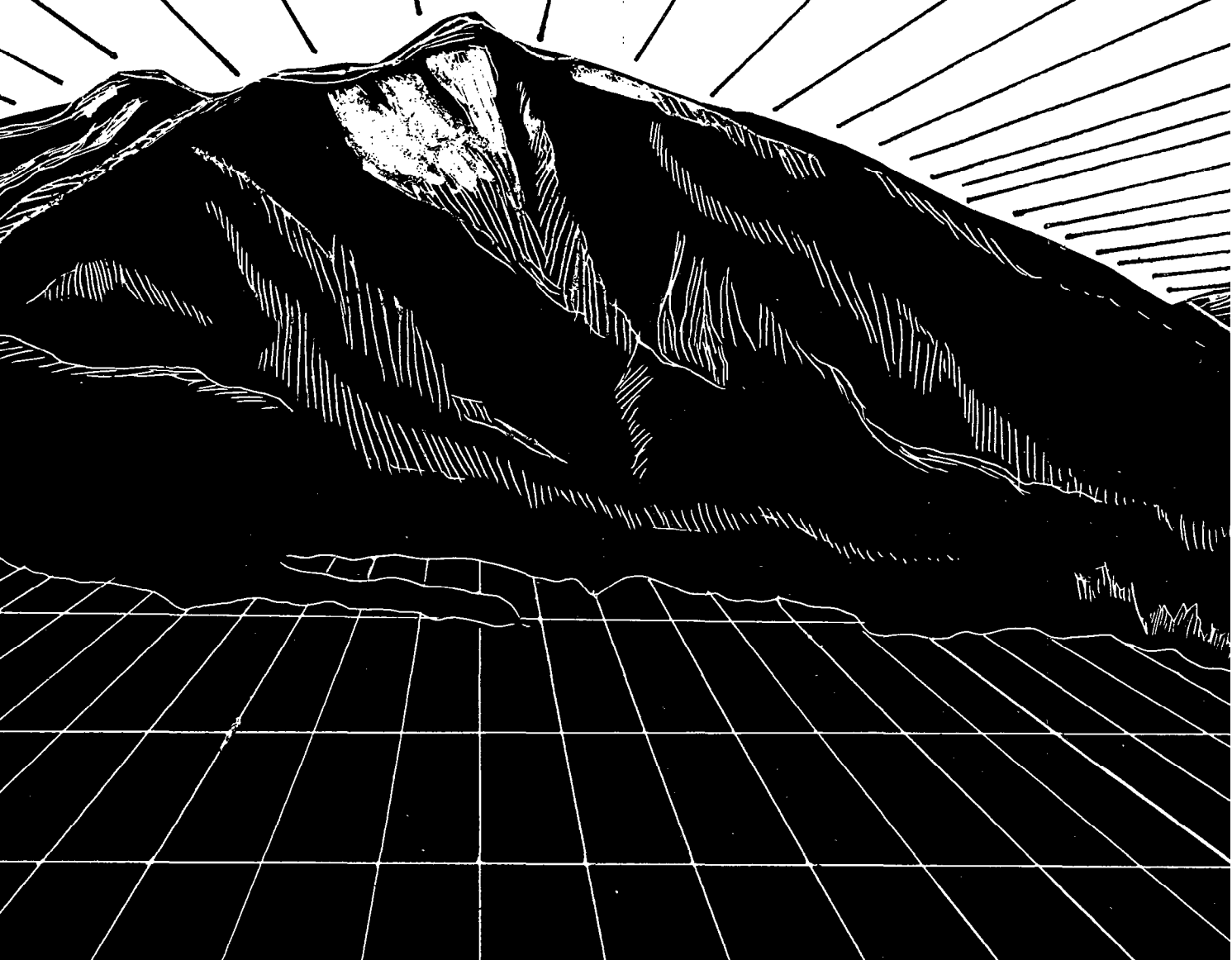
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RESOURCE MANAGEMENT PLAN

RECORD OF DECISION

GLENWOOD SPRINGS RESOURCE AREA



GLENWOOD SPRINGS RESOURCE MANAGEMENT PLAN

RECORD OF DECISION

Prepared by

BUREAU OF LAND MANAGEMENT
U. S. DEPARTMENT OF THE INTERIOR

January 1984

Bob Moore

State Director (Acting)
Colorado State Office

RECORD OF DECISION

Glenwood Springs Resource Management Plan
Glenwood Springs Resource Area
Glenwood Springs, Colorado

This resource management plan documents the decisions reached by the Bureau of Land Management (BLM) on managing 566,000 acres of public land in the Glenwood Springs Resource Area. Major decisions are to--

- maintain or increase existing wildlife populations,
- stabilize grazing operations,
- recommend 10,118 acres as suitable for wilderness designation,
- protect critical watersheds near Glenwood Springs, Rifle, and New Castle and erosion hazard areas scattered throughout the resource area,
- protect the visual resources throughout the resource area, especially along the Interstate 70 and Highway 82 travel corridors and in Thompson Creek, Bull Gulch, and Deep Creek,
- leave the majority of the resource area open for mineral exploration and development, but restrict mineral development in some areas having other important and unique resource values,
- harvest timber at current levels,
- ensure the continued availability of outdoor recreational opportunities not readily available from other sources, reduce impacts of recreational use, and continue management of the upper Colorado River for floatboating use,
- dispose of 15,500 acres of mostly small, isolated, and difficult to manage public land, and
- designate 393,615 acres as open, 152,001 acres as limited, and 20,426 acres as closed to motorized vehicle use.

Alternatives Considered

Four alternatives for managing the resources were considered: Continuation of Current Management, Resource Protection, Economic Development, and Preferred.

The Continuation of Current Management Alternative emphasized a level of management similar to the current level. It was the No Action Alternative required by the National Environmental Policy Act.

The Resource Protection Alternative emphasized protection of natural settings and protection and enhancement of fragile and unique resources.

The Economic Development Alternative emphasized development of resources that generate or produce goods, services, employment, and income.

The Preferred Alternative (called the Proposed Plan in the final environmental impact statement) emphasized protection of fragile and unique resources and production and development of renewable and nonrenewable resources. This alternative is the environmentally preferable alternative and the one that has been selected as the Glenwood Springs Resource Management Plan.

Mitigation Measures

All practicable measures will be taken to mitigate adverse impacts. These measures will be strictly enforced during implementation. Monitoring will tell how effective these measures are in minimizing environmental impacts. Therefore, additional measures to protect the environment may be taken during or following monitoring.

January 3, 1984
Date

Bob Moore (Acting)
George C. Francis
Colorado State Director
Bureau of Land Management

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CHAPTER 1

INTRODUCTION

CHAPTER 1

INTRODUCTION

This plan contains the decisions on all land use proposals presented in the June 1983 final environmental impact statement. It describes in general terms the implementation, monitoring, and amendment processes and tells how each resource will be managed, the order in which projects will be carried out, and what support will be needed.

This plan does not present information on environmental consequences, rationale, consistency, or effects of the management. This information was previously covered in the draft and final environmental impact statements, which may be obtained by contacting the Glenwood Springs Resource Area office.

In addition to this plan, a rangeland program summary and a wilderness study report are being prepared. The wilderness study report will identify the preliminary recommendations for each wilderness study area. The report, along with a final environmental impact statement on the wilderness portion of the plan, will be submitted to Congress for action. The rangeland program summary will summarize the livestock grazing management program and grazing decisions reached through this plan and consultation with affected parties. The rangeland program summary will describe which selective management category each allotment falls into and give a proposed schedule for issuance of grazing decisions where stocking rates are known. It will also detail the studies and actions to be taken to determine proposed stocking rates for those allotments where stocking rates are not known.

PURPOSE AND NEED

This plan provides a broad framework for multiple use management on public land. This plan makes land use allocations, sets broad production goals, and protects important resource values.

In addition to meeting the requirements in the *Federal Land Policy and Management Act of 1976* for land use planning (43 CFR, Part 1600), this plan satisfies the BLM's policy to (1) identify lands suitable for wilderness designation (the study phase of BLM's wilderness review process); (2) identify lands with potential for coal leasing (43 CFR, Part 3400); (3) respond to the court mandate (Natural Resources Defense Council et al. versus Watt (Civil Action 1983-75)) requiring the BLM to complete a livestock grazing environmental impact statement; and (4) identify public land as open, closed, or limited for off-road vehicle use (Executive Order 11989).

DESCRIPTION OF THE PLANNING AREA

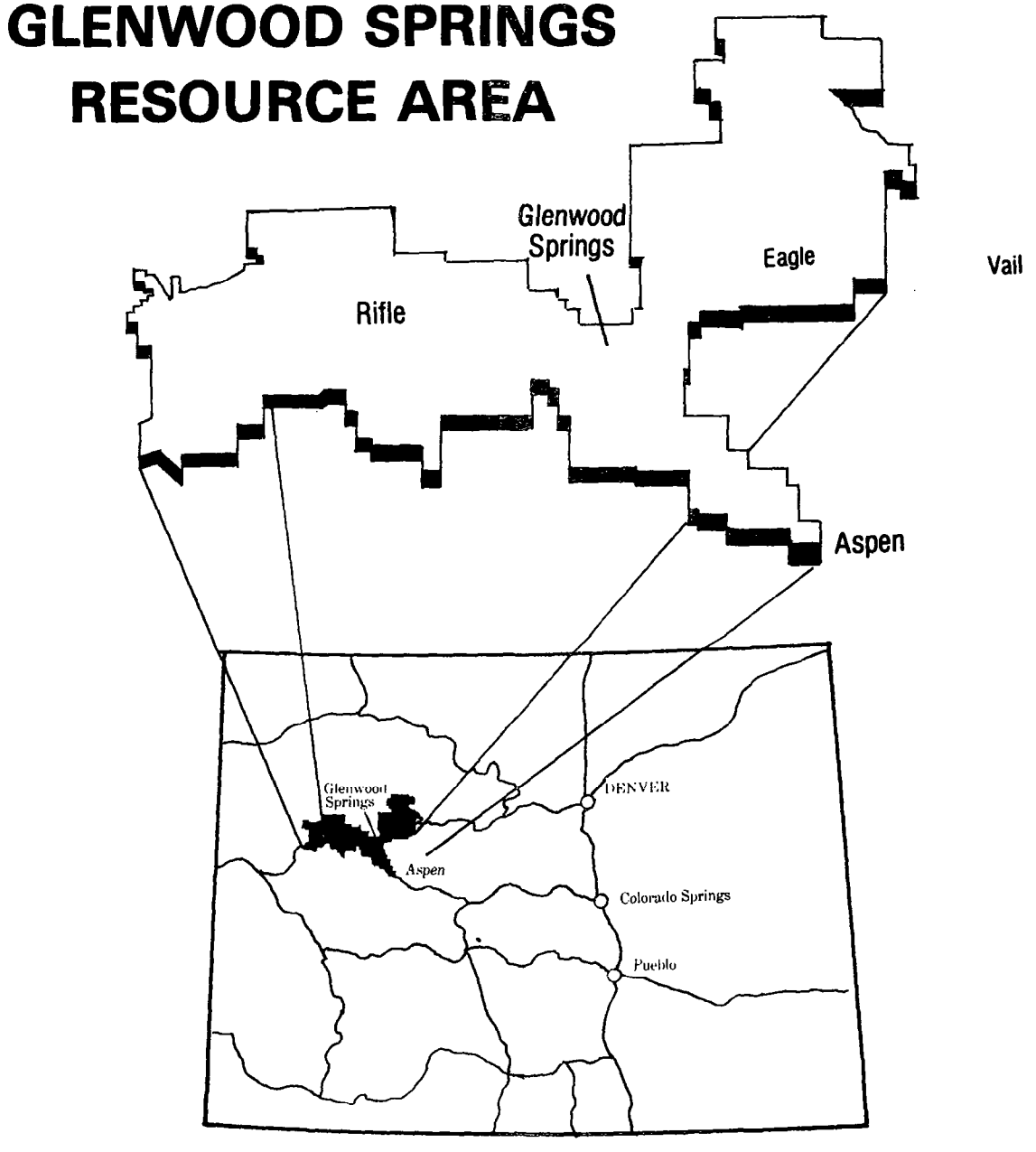
The Glenwood Springs Resource Area is located in west central Colorado 85 miles east of the BLM Grand Junction District Office (Fig. 1-1). It is bordered on the north and east by the BLM Craig District and the White River National Forest, on the south by the White River and Grand Mesa National Forests and the BLM Grand Junction Resource Area, and on the west by the BLM Grand Junction Resource Area.

The land ownership pattern is fragmented and stretches about 100 miles from west to east and 60 miles from north to south. The area lies primarily within Garfield, Eagle, and Pitkin Counties with smaller parts in Routt, Rio Blanco, and Mesa Counties. Approximately 1,280,000 acres of public, state, and private lands lie within the resource area boundaries. Public land accounts for 566,042 of these acres. Figure 1-2, located at the end of this document, shows land status.

IMPLEMENTATION

Decisions in the plan will be implemented over a period of years and must be tied to the BLM budgeting process. Therefore, priorities have been established for each resource to guide the order of implementation. The priorities link the planned actions in the resource management plan with the budget process. Priorities for each program will be reviewed annually to help develop the annual work plan commitments for the coming year. The priorities may be revised based upon new administrative policy, new Departmental directions, or new Bureau goals. The priorities of implementation are presented by resource in Chapter 2.

FIGURE 1-1
LOCATION MAP



Activity plans and environmental assessments may be required prior to conducting specific actions such as timber harvesting. For example, forest management plans will show specific project locations; describe and analyze the impacts of specific actions associated with development, operation, and rehabilitation of the project; and compare project costs with project benefits.

MONITORING

This plan will be monitored and evaluated every four years and at other times as appropriate, based upon the sensitivity of the resources to the decisions involved. This type of monitoring will be conducted to review the plan as a whole to determine the need for revision or amendment. Specific actions within the plan must also be monitored. Individual resources will be monitored as explained in Chapter 2. This type of monitoring will determine whether actions are consistent with current policy, whether original assumptions were correctly applied and impacts correctly predicted, whether mitigation measures are satisfactory, whether significant changes have been made in related plans of other federal agencies or state or local governments, or whether new data is of significance to the plan. Monitoring will also help to establish long-term use and resource condition trends and provide valuable information for future planning. Ultimately, monitoring and evaluation will determine whether there is sufficient cause to warrant maintenance, amendment, or revision of the plan.

MAINTENANCE

This plan will be maintained as necessary to reflect minor changes in data. This maintenance will be limited to refining or documenting a previously approved decision. It shall not expand the scope of resource uses or restrictions or change the terms, conditions, and decisions of the plan. Maintenance will be documented in supporting records. Formal public involvement will not be necessary to maintain the plan.

AMENDMENTS AND REVISIONS

This plan may be amended or revised if major changes are necessary. Monitoring and evaluation findings, new data, new or revised policy, a change in circumstances or a proposed action that may result in a change in the scope, terms, or conditions of the plan would warrant an amendment or revision. An amendment will be analyzed either in an environmental assessment or an environmental impact statement. The public and other agencies will be included in the amendment and revision processes.

VALID EXISTING RIGHTS

This plan may not repeal valid existing rights on public lands. Valid existing rights are those claims or rights to public land that take precedence over the actions in this plan. As an example, a mining claim issued prior to the preparation of this plan in an area withdrawn from mineral entry through the plan may be valid. Valid existing rights may be held by other federal agencies or by private individuals or companies. Valid existing rights may also pertain to oil and gas leases, rights-of-way, and water rights.

ADMINISTRATIVE ACTIONS

Various types of administrative actions will require special attention beyond the scope of this plan. Administrative actions are the day-to-day transactions required to serve the public and to provide optimal use of the resources. These actions are in conformance with the plan. They include issuance of permits for fuelwood, sawtimber, Christmas trees, and competitive and commercial recreation activities; lands actions, including issuance of grants, leases, permits, and resolution of trespass; facility maintenance; law enforcement; enforcement and monitoring of permit stipulations; cadastral surveys to determine legal land ownership; and engineering support to assist in mapping, designing, and implementing projects. These and other administrative actions will be conducted at the resource area, district, or state offices. The degree to which these actions are carried out will be based upon BLM policy, available personnel, and funding levels.

CHAPTER 2

RESOURCE DECISIONS

CHAPTER 2

RESOURCE DECISIONS

INTRODUCTION

This chapter describes the resource management plan. It provides specific information about each resource. Throughout this chapter, references are made to maps that display planned actions by resource. These maps are located at the end of this plan.

DESCRIPTION OF PLANNED ACTIONS

This section describes the planned actions, tells what support will be needed, and sets priorities for implementing the planned actions. The priorities were set based on public demands, administration policy, and Department of Interior and BLM directives. Therefore, these priorities may be revised as policy and directives change. The number one priority for each resource is maintaining its base program. This includes funding normal operating costs, completing administrative duties, and handling public inquiries. Please note that priorities were not established for implementing some resources, as their planned actions either will be implemented through approval of the plan or will require additional internal planning and coordination. For example, visual resource management classes shown on Map 13 became effective upon approval of this plan and, therefore, have no priority for implementation.

Air Quality Management

Objective

To limit air quality degradation in the resource area by ensuring public land use activities are in compliance with federal, state, and local legislation.

Planned Management Actions

Inventory air quality to establish a baseline from which changes associated with BLM or other agency proposals can be determined. Ensure proposals comply with all applicable local, state, and federal regulations to limit air quality degradation.

Support

Technical support for inventory and compliance will be required from air quality specialists in the Colorado State Department of Health, Air Pollution Control Division; U. S. Environmental Protection Agency, Region VIII; and the U. S. Forest Service, Region II.

Implementation and Monitoring

Site-specific project plans for proposals affecting public and adjacent lands will be reviewed for compliance with existing air quality laws and policies protecting these areas. BLM proposals will be analyzed in environmental assessments. Mitigation will be incorporated into project proposals when necessary to reduce air quality degradation.

Priorities of Implementation

None.

Water Quality Management

Objective

To maintain or improve existing water quality in the resource area where possible.

Planned Management Actions

Prepare a water quality monitoring plan to (1) locate the source of water quality problems in four known problem areas, (2) gather baseline information on water quality throughout the resource area, and (3) determine the effects of planned vegetation treatment on water quality.

Investigate four areas shown on Map 1 to identify the origins of existing water quality problems. Once identified, take actions to correct or reduce the problems originating on public land using tech-

niques listed in Appendix A. These areas and their water quality problems are listed below:

Divide Creek. High levels of sediment, bacteria, and salinity; and high alkalinity concentration.

Horse, Willow, and Poison Creeks. High levels of sediment and salinity; high water temperatures; high manganese and sulfate levels; poor riparian vegetation; poor channel stability; low dissolved oxygen levels; and very high erosion hazard.

Upper Colorado River. High sediment, bacteria, and salinity; high water temperature; and low dissolved oxygen levels.

Milk and Alkali Creeks. High sediment and salinity; and poor benthic diversity.

Maintain or improve water quality on remaining public land outside these water quality management areas by including site-specific mitigation measures in other resource projects having the potential to affect water quality.

Comply with water quality guidelines developed in 208 region plans and with state water quality standards.

Support

Engineering support will be required in the design and construction of projects for protection of water quality. Erosion control structures will require, at a minimum, the filing of a permit with the Colorado State Engineer. Water rights will be required for perennial streams, on reservoirs over 10 acre-feet in size, or on dams taller than 15 feet.

Implementation and Monitoring

The water quality monitoring technique will vary by purpose. Monitoring to locate the source of water quality problems in problem areas will involve sampling at different points along the watershed and during different flow regimes. If individual problem sources exist on public land and can be remedied efficiently through BLM management, activity plans will be prepared to detail the necessary management.

Monitoring to gather existing water quality information will involve establishing sampling sites at Horse, Milk, and East Divide Creeks. Streams already monitored by other agencies, which will also prove useful for the baseline monitoring effort, include Northwater, East Middle Fork Parachute, East Fork Parachute, and Ben Good Creeks, all on the Naval Oil Shale Reserve west of Rifle.

Monitoring to determine the effects of planned vegetation treatments will involve monitoring either above and below project sites or in paired watersheds and will be conducted both before and after project implementation. Monitoring of projects will be conducted only when projects could significantly affect water quality or where watershed conditions (erosion hazard, slope, channel stability, soil stability, and the like) are sensitive to surface disturbance. Sampling frequency will depend on the type of monitoring conducted. Samples will be collected in water quality problem and baseline areas 5 to 10 times a year. Samples will be collected on no more than one or two watersheds per year in vegetation treatment areas.

Priorities of Implementation

Priority 1. Prepare a water quality monitoring plan to guide water quality management on all public land in the resource area for the duration of the resource management plan.

Priority 2. Monitor and investigate water quality problem areas; monitor strategic sites throughout the resource area; monitor vegetation treatment areas.

Investigate water quality problem areas in sequence. The following criteria will dictate the sequence.

- Severity of the water quality problem.
- Its importance for implementation of surface-disturbing activities by other management programs.
- The degree of public attention focused on the area.

Of the four water quality problem areas, the Milk and Alkali Creek watersheds and the Horse, Willow, and Poison Creek area have the highest priority because of the severity of the problems and the public attention that has been focused on the areas. Probably no more than one or two areas would be investigated at any one time.

Water Yield Management

Objective

To increase water yield throughout the resource area through forest management practices and through treatment of mountain brush vegetation types to improve livestock and big game forage.

Planned Management Actions

Achieve water yield objectives by including, to the extent possible, design features in other resource activity project proposals that increase water yield. Projects that can be designed to increase water yield include mountain brush (oakbrush being the main component) treatment (by mechanical manipulation or by burning) to increase forage for livestock and wildlife, commercial forest harvest, and aspen and spruce-fir harvest (Map 2). Design features that can be incorporated in these programs are listed in Appendix A.

Conduct an experiment on the Naval Oil Shale Reserve west of Rifle to determine both the quantity and timing of increases in water yield that can be expected from harvesting aspen.

Support

Fire management support will be needed for managing natural fire in areas where water yield objectives can be met through fire management.

Implementation and Monitoring

A research proposal will be prepared for the water yield experiment. This proposal will detail the location, treatment technique, length of the study, monitoring, equipment, manpower, budget requirements, and the criteria by which the experiment will be judged a success or failure. Other interested parties will be invited to participate in the experiment.

The only monitoring that will be conducted specifically for water yield is the initial water yield experiment on the Naval Oil Shale Reserve. Water quality monitoring will be conducted during implementation of aspen treatments once the study is completed, assuming results are favorable.

Priorities of Implementation

None.

Critical Watershed Areas

Objective

To protect the municipal watersheds providing domestic water for the communities of Rifle and New Castle, to manage debris flow hazard zones adjacent to Glenwood Springs, and to protect watershed conditions in erosion hazard areas.

Planned Management Actions

Take measures to protect 5,858 acres of municipal watersheds, 7,126 acres of debris flow hazard zones, and 50,200 acres of erosion hazard areas. Restrict motorized vehicle use, vegetation manipulations, timber harvesting, mineral development, fire, livestock grazing, and utility development in these areas as as shown in Table 1.

Table 1. Summary of Planned Actions on Critical Watershed Areas

Action	MW[1]	DFHZ[2]	EHA[3]
Acres closed to off-road vehicle use (Map 15)	0	0	0
Motorized vehicle travel limited to existing roads and trails during late spring (Map 15)	0	0	8,500
Motorized vehicle travel limited to existing roads and trails year round (Map 15)	0	0	41,700
Motorized vehicle travel limited to designated roads and trails year round (Map 15)	5,858	7,126	0
Vegetation manipulations to increase forage and water yield prohibited	yes	yes	no
Timber harvesting prohibited	[4]no	yes	no
Oil and gas leasing prohibited	no	no	no
Oil and gas surface facilities prohibited	yes	yes	no
Included in fire exclusion zone	yes	yes	no
Suitability designation for utilities development (Map 17)	Sensitive	Sensitive	Open
Livestock grazing limited to light grazing	no	yes	no
Designated as an ACEC	no	yes	no

[1]MW—Municipal watersheds
[2]DFHZ—Debris flow hazard zone
[3]EHA—Erosion hazard area
[4]One stand of pinyon juniper on less than 40 percent slope in the Rifle municipal watershed can be harvested.

In addition, designate the debris flow hazard zones adjacent to Glenwood Springs as an area of critical environmental concern (ACEC) and manage as follows:

1. Limit motorized vehicle travel year round to designated roads and trails.
2. Prohibit vegetation manipulations to increase forage and water yield.
3. Prohibit timber harvesting.
4. Prohibit surface facilities for oil and gas development.
5. Designate as a sensitive area for utilities development
6. Limit livestock use to light grazing.

Also include the area in a fire exclusion zone and extinguish all fires immediately. Work closely with the city of Glenwood Springs to implement applicable recommendations arising from the city's debris flow study.

Critical watershed locations are shown on Map 3.

Support

Fire management support will be needed for management of natural fire in meeting the resource objectives and for the protection of critical watershed values.

Engineering support will be needed to design measures for reducing runoff and soil loss in debris flow hazard zones.

Implementation and Monitoring

Recommendations to protect municipal watersheds and off-road vehicle recommendations to protect erosion hazard areas went into effect upon approval of this plan.

Recommendations to protect the debris flow hazard zones went into effect upon approval of this plan. In addition, the debris flow study contracted by the city of Glenwood Springs includes a number of recommendations that apply to public land. The BLM will work closely with the city to ensure rapid and efficient implementation of practical recommendations.

For the debris flow hazard zone above the unincorporated area west of Glenwood Springs not included in the debris flow study, the BLM will work with the public to derive measures to reduce the debris flow hazard. Measures that apply to public land will be subject to environmental and feasibility analysis and, assuming these are favorable, will be implemented as funding becomes available.

Priorities of Implementation

None.

Minerals Management

Objective

To maintain the maximum amount of public land available for exploration and development of minerals.

Planned Management Actions

Continue withdrawals for other uses not compatible with mineral development. Continue existing constraints placed on mineral activities by other resources.

Place constraints on mineral activities to protect high value recreation resources, wilderness resources, critical wildlife habitat, and water resources (critical watersheds). Existing and additional constraints are described in Table 2 and shown on Map 4.

Periodically review the need for restrictions on minerals.

Submit a withdrawal proposal to the Secretary of the Interior to withdraw the Deep Creek and Thompson Creek areas for recreation purposes, thus excluding mineral development in these areas.

Designate approximately 28,520 acres in the Hogback Coal Field as acceptable for further consideration for coal leasing based on a coal unsuitability review. Designate approximately 1,560 acres as unacceptable for coal leasing based on multiple use conflicts as explained in the 1978 coal update of the Glenwood Springs Management Framework Plan.

Continue to allow mineral exploration and development on lands not withdrawn for other uses or restricted to mineral activity.

Support

Cadastral survey support will be needed to locate public land boundaries.

Implementation and Monitoring

Restrictions on oil and gas activities and restrictions on mineral sales went into effect upon approval of this plan. Plan approval also constituted a continuation of all existing restrictions on mineral development. Withdrawal of the Deep Creek and Thompson Creek areas for recreation purposes will require a formal withdrawal under Secretarial order.

Table 2. Summary of Lands Open and Closed to Mineral Development

Category	Acres	Percent of Resource Area
Open to Mineral Location	515,481	91
Closed to Mineral Location	50,561	9
Preliminarily Suitable Wilderness[1]	10,400	
Reclamation Project[2]	435	
Thompson Creek Natural Environment Area	4,286	
Recreation Sites	250	
Public Water Reserves[2]	6,990	
Recreation and Public Purpose[2]	40	
Oil Shale Withdrawal[2]	25,600	
Deep Creek Recreation Management Area[1]	2,560	
Open to Oil and Gas Leasing	554,682	98
Closed to Oil and Gas Leasing	11,360	2
Preliminarily Suitable Wilderness[1]	10,400	
Thompson Creek Natural Environment Area	960	
Open to Oil and Gas Surface Occupancy	520,996	92
Closed to Oil and Gas Surface Occupancy	45,046	8
Thompson Creek Natural Environment Area	3,326	
Fryingpan, Roaring Fork, Eagle, Crystal, and Colorado River Corridors	21,200	
Rifle Mountain Park and Rifle Fish Hatchery	1,360	
Hack Lake Recreation Management Area[1]	3,480	
Deep Creek Recreation Management Area[1]	2,560	
Municipal Watersheds[1]	5,960	
Glenwood Springs Debris Flow Hazard Zone[1]	7,160	
Open to Mineral Sales	548,796	97
Closed to Mineral Sales	17,246	3
Preliminarily Suitable Wilderness[1]	10,400	
Thompson Creek Natural Environment Area	4,286	
Deep Creek Recreation Management Area	2,560	

[1]Acreage figures based on legal subdivision boundaries.
[2]These figures reflect acreage adjustments resulting from an ongoing analysis and review of withdrawals and reserved lands.

The restrictions on mineral development in the wilderness study areas will become effective only if Congress designates the areas as wilderness. Pending this determination, the areas will be subject to BLM's *Interim Management Policy and Guidelines for Lands Under Wilderness Review.* In the event Congress does not designate the Hack Lake or Bull Gulch areas as wilderness, they will be closed to oil and gas surface occupancy.

Locatable Minerals. BLM approval will not be needed for prospectors to claim and develop locatable minerals on areas open to mineral location if proposed operations disturb 5 acres or less per year. However, notification will be required. Prospectors proposing to disturb more than 5 acres per year will be required to submit a plan of operations under *43 CFR 3809, Surface Management of Public Lands under U. S. Mining Laws.*

Leasable Minerals. Mineral reports and environmental assessments will be prepared for all applications to prospect and develop geothermal, potassium, and other leasable minerals except oil and gas. Development that will not significantly conflict with environmental, economic, or social values will be encouraged.

Oil and gas development will occur on areas identified in the plan as open to leasing. Site-specific stipulations required to mitigate impacts of development will be included in oil and gas leases and in permits to drill.

Areas identified as suitable for further consideration for coal leasing will enter the formal coal leasing process. The first step will be to ask for industry interest in possible coal leasing on the Grand Hogback. Lease tracts will be delineated and tract profile reports written for areas where interest is received. The regional coal team will rank the tracts for high, medium, and low leasing potential. The team will group the tracts and prepare a regional environmental impact statement for those tracts and other tracts identified throughout the coal region. The coal team will then make recommendations on tract leasing to the Secretary of the Interior who will make the final decision on lease tracts and lease sale schedules.

Salable Minerals. Salable minerals (moss rock, top soil, sand and gravel, scoria, fill dirt, etc.) will be primarily purchased from established common use areas. Mineral reports and environmental assessments will be prepared on all government agency

and individual applications to extract salable minerals outside of common use areas. Operations not in conflict with environmental, social, or economic values will be encouraged.

Priorities of Implementation

None.

Aquatic Habitat Management

Objective

To increase fish production and recreational fishing use on streams having more than one-half mile of continuous flow across public land and on lakes surrounded by at least 40 acres of public land. (Only streams and lakes with existing or easily obtainable public access and either an existing or potential fishery qualify for management.)

Planned Management Actions

Monitor or improve aquatic habitat of streams and lakes identified on Map 5 and listed in Table 3. (Appendix A lists management actions that can be used to improve fisheries.) Monitor the streams and lakes on public land not recommended for improvement for changes in aquatic conditions. Improve those found to be in a declining condition as funding and manpower becomes available. Coordinate with the Colorado Division of Wildlife to establish minimum streamflow or pool levels for streams and lakes proposed for management where filings do not currently exist.

Table 3. Summary of Planned Fisheries Actions

Number[1] and Name	Habitat Improvements		Monitor		Area of Critical Environmental Concern		Minimum Filings		Access Required (miles)[2]
	Miles	Surface Acres	Miles	Surface Acres	Miles	Surface Acres	Stream-flow	Pool Level	
King Mountain Capability Unit									
1. Cedar Creek			0.6						
2. Rock Creek			3.1						
3. Egeria Creek			7.6				X		7.6
4. Deep Creek			3.9						
5. Cabin Creek			1.4						
6. Sunnyside Creek			2.0						
7. Willow Creek			0.5						
8. Hack Lake		2.0						X	
9. Sheep Creek West Fork	2.7						X		
10. Sheep Creek			0.5						
11. Sweetwater Creek			0.5						
12. Derby Creek			0.8						
13. Horse Lake				2.1				X	
14. Red Dirt Creek	1.0						X		
15. Upper Colorado River	25.1						X		
Castle Peak Capability Unit									
16. Piney River			1.6						
17. Castle Creek	2.9						X		2.9
18. Edges Lake		3.0						X	
19. Catamount Creek	2.0						X		2.0
20. Norman Creek	1.2						X		
Eagle-Vail Capability Unit									
21. Eagle River	5.0								
22. *Frost Creek			0.7						
23. Salt Creek			0.2						
24. Cottonwood Creek			0.8						
25. Abrams Creek	1.9						X[3]		1.9
Roaring Fork Capability Unit									
26. Prince Creek			1.3						
27. Thompson Creek			2.5						
28. Thomas Creek			0.8						
29. Crystal River									
30. Sopris Creek West			1.3						

Table 3. Summary of Planned Fisheries Actions—Continued

Number[1] and Name	Habitat Improvements		Monitor		Area of Critical Environmental Concern		Minimum Filings		Access Required (miles)[2]
	Miles	Surface Acres	Miles	Surface Acres	Miles	Surface Acres	Stream-flow	Pool Level	
31. Sopris Creek East			0.6						
32. Snowmass Creek			0.2						
33. *Red Canyon Creek			0.5						
34. Fryingpan River			2.9						
35. *Coulter Creek West			1.9						
36. Cattle Creek	0.5		0.9				X		
37. Fourmile Creek									
38. Thompson Creek North			2.3						
39. Threemile Creek			0.3						
40. Roaring Fork River			1.2						
41. *Mesa Creek			0.6						
42. Mitchell Creek			0.8						
43. Colorado River			1.0						
Garfield Capability Unit									
44. Rifle Creek			0.6						
45. Elk Creek Main			0.2						
46. Harris Gulch			1.9						
47. Butler Creek			1.8						
48. Rifle Creek Middle			1.8						
49. George Creek			0.8						
50. Rifle Creek East			0.3						
51. Piceance Creek			0.5						
52. Harris Reservoir				12.0					
53. Elk Creek East			0.1						
54. Keyser Creek			0.9						
55. *Dry Possum Creek			0.4						
56. Canyon Creek East			2.0						
57. Possum Creek	0.1		4.6				X		4.7
58. Canyon Creek			1.4						
59. Colorado River			1.8						
60. Wallace Creek North			0.9						
61. Wallace Creek			1.2						
62. Battlement Creek			1.0						
63. Cache Creek									
64. *Baldy Creek	1.0		1.0				X		
65. Garfield Creek			0.3						
66. Second Anvil Creek[4]	1.0		0.5						
67. Parachute Creek, East Middle Fork[4]	1.2								
68. Northwater Creek[4]	3.2		1.0						
69. Parachute Creek, East Fork[4]	6.4								
70. Trapper Creek[4]	2.3		3.4						5.7
71. Fravert Reservoir									
72. JQS Gulch[4]	0.5		0.9						
73. First Water Gulch			0.6						
74. First Anvil Creek[4]	1.0		1.5						
75. Lower Colorado River			1.0						
Total	60.2	5.0	75.7	14.1	0	0	11	3	24.8

[1]This number corresponds to the number shown on Map 5.
[2]The miles of stream that would require additional legal access for public use.
[3]Below the diversion at SE¼ SW¼ T. 5 S., R. 84 W., 6th P.M.
[4]Management of these streams is outlined in the BLM *Naval Oil Shale Reserve Aquatic Habitat Management Plan.*
*These streams have potential as a fishery but presently do not support a fish population.

Fish management emphasis in the resource area is primarily on Colorado River cutthroat, brook, and rainbow trout; however, other cold and warm water game and nongame fish species that exist in the resource area will benefit from the planned actions.

Support

Water rights will have to be secured for minimum streamflows and pool levels. Assistance from the Colorado Division of Wildlife will be required for im-

plementation of habitat improvement projects, fish stocking and introduction, minimum streamflow and pool level filings, and stream monitoring. Engineering and hydrologic support will be required for project design and construction. Fire management support will be needed for management of natural fire in meeting the resource objectives and for the protection of unique and fragile aquatic habitat areas. Cooperation with livestock operators will be essential in some areas to effectively manage riparian habitat.

Implementation and Monitoring

Streams will be monitored to ensure maintenance of water quality and riparian condition and to evaluate the effectiveness of stream improvement practices. This monitoring will include riparian habitat conditions and trend; water quality, quantity, and temperature; fish production; pool and riffle ratios; and bank stability. The order in which streams will be monitored will be based on expected impacts and scheduled habitat improvements. Funding availability will be an important factor in determining how many and what streams will be improved or monitored. Assistance from the Colorado Division of Wildlife for funding and manpower will be essential for a successful management program.

Priorities of Implementation

Priority 1. Monitor, maintain, or improve aquatic habitat on streams and lakes containing threatened or endangered species (Colorado River cutthroat trout, razorback sucker).

Monitor, maintain, or improve aquatic habitat on streams and lakes having good fishery values. (Must have good access; fair to good fishery value; cross at least 1/2 mile of public land, or, in the case of lakes, be surrounded by at least 40 acres of public land.) Priorities will be based on streams and lakes having the most problems and the greatest opportunity for improvement or return for dollars spent.

Priority 2. Monitor and maintain aquatic habitat on streams and lakes having little or no fishery values.

Terrestrial Habitat Management

Objectives

To provide approximately 57,933 animal-unit months (AUMs) of big game forage (the amount needed to meet Colorado Division of Wildlife big game population goals in 1988), to improve existing wildlife habitat conditions, and to increase wildlife species diversity.

Planned Management Actions

Allocate approximately 50 percent (46,210 AUMs) of the existing forage on public land in the resource area to big game and livestock. The portion of this forage allocated to big game will slightly exceed the estimated existing use (5-year average) of 45,120 AUMs. Make available the remaining 50 percent of existing forage and all nonforage vegetation habitat for other game and nongame wildlife species.

Treat 19,840 acres of vegetation over a 20-year period (990 acres per year) to increase forage production for big game. This production is needed to meet existing big game needs on areas currently having forage shortfalls. Allocate the expected increase of 6,383 AUMs of forage to big game. Treat additional vegetation to increase forage beyond the needs of existing big game only after existing demand is satisfied.

Prohibit livestock grazing on some crucial big game winter ranges after October 15 or when browse use by livestock reaches 20 percent (whichever occurs first) and on summer and some winter ranges after November 15 to reduce competition between these species. Make habitat available for introductions of sage and sharptail grouse, turkey, peregrine falcon, and river otter. Identify the Grand Hogback between Rifle Gap and Monument Peak as a possible bighorn sheep introduction area. Acquire additional information to determine the most suitable location for an introduction. Develop and improve water sources and riparian and waterfowl habitat where needed. Limit off-road vehicle use on 75,463 acres of crucial winter range (see Map 15).

Parcels of public land totaling 9,710 acres have been identified as suitable for cooperative management with the Colorado Division of Wildlife. If possible, turn over administration of public land within cooperative management areas (the lower Colorado River is one of these areas) to the Colorado Division of Wildlife. Designate the lower Colorado River as an area of critical environmental concern (ACEC) to protect important riparian and wildlife values. Species of concern using the lower Colorado River include the bald eagle, great blue heron, waterfowl (especially Canada geese), resident species such as mule deer and other riparian-dependent species, and threatened or endangered fish such as the razorback sucker and, possibly, the humpback chub. Designate the lower Colorado

River as a sensitive area for the placement of utility facilities.

Manage the Lower Colorado River ACEC as follows:

- Identify for cooperative management with Colorado Division of Wildlife.
- Designate as sensitive for utility and communication facilities.
- Enhance habitat through cottonwood, willow, and shrub plantings as well as grass and forb seedings.
- Create additional wetland/riparian/pond habitat through sand and gravel mining.
- Exclude livestock grazing with fencing.
- Designate areas where certain types of development will enhance habitat values, buffer zones around crucial habitat features where limited development can occur, and exclude areas where any development will be detrimental to the existing wildlife needs.
- Apply for seasonal restrictions on development proposed for areas near crucial habitats.
- Place artificial nest boxes for Canada geese.
- Place artificial perches for bald eagles.

Table 4 shows the major actions planned for terrestrial habitat management. Locations are shown on Map 6.

Table 4. Summary of Terrestrial Wildlife Planned Management Actions

Action	AUMs	Acres
Initial allocation of existing forage	46,210	
Vegetation manipulated to increase wildlife forage over a 20-year period		19,840
Expected increases in forage	6,383	
Total projected allocation in 20 years	[1]52,593	
Crucial big game winter range limited to off-road vehicle use (Map 15)		75,463
Habitat planned for cooperative management with Colorado Division of Wildlife (Map 6)		9,710
Habitat planned as an area of critical environmental concern (Map 6)		unknown

[1]This is 5,340 AUMs short of the estimated AUMs needed to meet the Colorado Division of Wildlife's population goals for 1988.

Support

Fire management support will be needed for the planning and implementation of prescribed fire and the management of natural fire in meeting wildlife resource objectives. Engineering, hydrologic, soils, range, and archaeologic support will be required for project design and construction. Water rights will have to be secured for all water developments. Assistance from the Colorado Division of Wildlife will be required for activity plan development, implementation of habitat improvement projects, wildlife introductions, habitat monitoring, and cooperative management of public land. U. S. Forest Service cooperation will be needed for implementation of some habitat improvement projects such as prescribed burns. Acquisition of legal access to public land will be needed to open areas to terrestrial habitat management (see Map 16).

Implementation and Monitoring

Habitat management plans (HMPs) will be written for selected areas of wildlife habitat. The plans will include detailed information on species emphasis, management objectives, constraints, planned actions, coordination with other programs and agencies, environmental analysis, implementation schedule and cost analysis and evaluation procedures. Priorities will be determined by need (shortage of forage, conflict with livestock, and so on) and opportunity or potential for improvement.

An HMP will be written to define big game management opportunities in the Sweetwater-Burns area and the upper Colorado River (Game Management Units 25, 26, 34, and 35). If a decision is made to introduce bighorn sheep on the Grand Hogback, an HMP will be written to supplement the Piceance Basin HMP. Other management plans will be developed following implementation of these plans.

Implementation of cooperative management recommendations on public lands and wildlife introductions will be dependent on cooperation and input from the Colorado Division of Wildlife.

Sensitive habitats such as crucial big game winter range will be monitored for forage production, habitat condition changes, and effectiveness of improvements. Monitoring studies will include browse use and pellet group transects. Wildlife habitat monitoring will enable BLM to make big game population adjustment recommendations to the Colorado Division of Wildlife.

Decision on forage allocation and seasonal use restrictions will be made after monitoring described in livestock grazing management.

Priorities of Implementation

Priority 1. Monitor, maintain, or improve habitat for threatened or endangered species (bald eagle, peregrine falcon).

Monitor, maintain, or improve winter range for mule deer and elk. Focus priorities for specific treatment areas on those game management units having the greatest problems, the most potential, or both.

Priority 2. Monitor, maintain, or improve riparian habitat as identified in the resource management plan.

Priority 3. Monitor, maintain, or improve habitat for other wildlife species of high interest such as sage grouse and great blue heron. Sensitivity, visibility, and economic value to local communities will aid in determination of species and habitat priorities.

Livestock Grazing Management

Objective

To provide 56,885 animal-unit months (AUMs) of livestock forage to accommodate active livestock preference. Active livestock preference is that portion of the total preference for which grazing use may be authorized (see Glossary).

Planned Management Actions

Level of Management. Intensively manage the following allotments, either alone or in combination with adjacent allotments:

Garfield Capability Unit—8009, 8017, 8018, 8026, 8039, 8046, 8105*, 8106, 8107, 8213*, 8218, 8219, 8220, 8221, 8222*, 8908*, 8909, 8910*

Roaring Fork Capability Unit—8334, 8335, 8336, 8341, 8342

Eagle-Vail Capability Unit—8501, 8502, 8504, 8506, 8734*

Castle Peak Capability Unit— 8601*, 8606, 8616, 8619, 8620, 8639, 8641, 8642*, 8643*, 8730*, 8731*, 8732*, 8733*, 8735*

King Mountain Capability Unit—8506

Construct facilities such as springs, reservoirs, fences, corrals, and livestock trails where necessary to control and distribute livestock. Appendix A lists range improvement techniques that can be used. Table 5 shows the number of projects associated with a typical 5,000-acre allotment.

Table 5. Typical Allotment Range Improvement Projects

Fence (miles)	Cattleguard	Corral	Stocktrail (miles)	Reservoir	Spring	Pipeline (miles)	Vegetation Manipulation (acres)	Seeding (acres)
10	1	1	.25	5	5	.75	400	100

Figures in Table 5 are based on averages of the eight existing allotment management plans in the resource area. They are for a complete AMP and do not differentiate between existing and proposed improvements. Most allotment boundaries are shared with adjacent allotments and are presently fenced. Total miles of fence will depend on number of pastures and natural barriers. Water developments will depend on availability and distribution of springs and potential reservoir sites. Cattleguards will be used on well-travelled roads. Stocktrails to aid in livestock movement will be needed wherever dense vegetation or steep slopes exist.

Forage Allocation. Initially, allocate 37,852 AUMs of existing forage for livestock use (Table 6).

*Allotment is presently managed under an allotment management plan (AMP). (Allotment boundaries are shown on Map 7.)

Table 6. Summary of Livestock Forage Allocation

Allocation	AUMs	Percent Change from Existing Use	Percent Change from Active Preference
Existing use	37,488		
Initial allocation	37,852	+1	−33
Expected increase from vegetation manipulation	12,742		
Projected allocation—existing plus expected increases	50,594	+35	−11
Additional forage from unallotted allotments	756		

Allocate existing forage proportionately to livestock and big game, the criterion being active preference for livestock and 5-year average demand for big game. Both will be constrained by initial stocking rate limitations. Allocate all available forage on allotments in big game winter range unavailable to livestock because of stocking rate limitations or slope restrictions to big game. Forage available beyond active preference and 5-year average on big game summer ranges will be available for wildlife but limited by allotment to Colorado Division of Wildlife goals. (Summer range is not limiting to big game; therefore, allocating forage beyond Colorado Division of Wildlife population goals in summer range will be unnecessary since winter range is what limits herd size.)

Allocate additional forage produced through vegetation manipulation on wildlife winter range first to big game to meet existing use (5-year average) and then to livestock up to active preference. On summer range, allocate additional forage to livestock first.

Following initial allocation, manipulate 27,800 acres of vegetation on 98 allotments to increase livestock forage by 12,742 AUMs using vegetation manipulation techniques listed in Appendix A. The resultant total projected allocation will be 50,594 AUMs. The 27,800 acres identified for manipulation was determined from range site potential and soil suitability and adjusted according to the livestock forage goal by allotment. In addition, make 756 AUMs on 24 unallotted allotments available for livestock use. Table 7 shows allocation by allotment for both livestock and wildlife. Additionally, any increases in forage due only to improved grazing management will be allocated to livestock.

Table 7. Livestock and Wildlife Preference, Use, and Allocation by Allotment

(in animal-unit months)

Allotment Number and Name	Livestock					Wildlife			
	Preference		Existing Use (5-Year Average)[1]	Initial Allocation[2]	Projected Allocation[3]	Objective[4]	Existing Use (5-Year Average)[5]	Initial Allocation[2]	Projected Allocation[3]
	Total	Active							
Garfield Capability Unit									
8001 Sample	15	15	15	0	0	30	21	51	51
8002 Reed	50	49	0	28	49	37	27	65	65
8003 Kissel	44	44	24	36	36	122	102	170	170
8004 Bowen Isolated Tracts	44	38	35	23	23	14	10	14	14
8005 Doak	309	83	63	51	83	27	21	27	27
8006 Cedar Mountain	265	255	129	255	255	430	337	430	430
8007 Rifle	157	76	15	76	76	220	157	220	220
8008 Jackson	31	31	6	6	31	23	17	23	23
8009 Weaver	900	300	180	162	162	731	558	314	554
8010 East Cedar Mountain	829	128	96	96	108	311	217	164	217
8011 Middle Rifle	65	60	35	47	47	85	69	85	85
8012 Brush Creek Common	415	396	275	119	396	1,182	932	846	932
8013 Harris Gulch	1,200	1,138	275	142	538	323	247	314	314
8014 Graham	26	26	24	26	26	24	22	24	24
8015 Hayden	176	176	88	23	97	35	29	38	38
8016 Southwest Rifle Creek	400	371	53	93	371	230	192	230	230
8017 Lundgren-Hogback	229	121	86	58	121	155	109	155	155
8018 Horse Mountain-Brush Creek	1,360	1,095	365	368	457	1,043	790	444	790
8019 Morrow	125	74	59	17	49	37	31	37	37
8020 Coal Mine	14	14		1	1	4	3	4	4
8021 Watts	375	183	183	128	183	116	89	63	89
8022 Simpson and Nichols	380	105	105	43	105	67	56	76	76
8023 Government Creek Isolated	10	8	8	4	4	7	5	2	2
8024 Ryden	234	88	88	45	88	222	174	141	174
8025 Dodo	36	36	29	31	36	333	258	227	258
8026 Hogback Common	443	303	265	120	236	202	141	147	147
8027 Roberts	22	22	18	7	7	23	19	6	6
8028 Red Mountain	60	44	29	44	44	106	73	93	93
8029 Pretti-Roberts	414	394	124	60	60	199	138	89	89
8030 Castle	150	60	40	51	51	115	76	65	65
8031 Hill	43	43	34	18	18	43	28	27	27
8032 Elk Park Common	292	271	29	103	197	222	155	110	155
8033 Brosius Gulch	118	75	30	42	42	136	94	59	59
8034 Harvey Gap 1	54	54	8	19	19	36	25	21	21
8035 Harvey Gap 2	180	180	16	90	90	229	159	80	80
8036 Jewell	48	32	32	27	27	45	28	24	24
8037 Scutter Gulch	36	16	16	15	15	37	23	22	22
8038 Wittwer	7	4	4	2	2	8	5	2	2
8039 Government Creek Common	991	991	296	356	655	735	501	434	501
8040 Middle Elk					0	137	98	98	98
8041 Andgee				14	14	79	55	66	66
8042 Chirp				18	18	32	24	42	42

8043	Butler Creek				62	62	82	60	122	122
8044	Rifle Gap				181	181	212	152	454	454
8045	North Hogback				37	37	94	59	96	96
8046	Jackson Gulch	150	150	90	124	150	156	130	127	130
8201	Kaiser Hells Hole	29	29	23	18	18	63	54	63	63
8202	Possum Creek	417	417	266	280	417	132	107	132	132
8203	Storm King	272	272	178	272	272	403	328	403	403
8204	Storm King-Dolan Gulch	18	9	2	7	7	21	17	21	21
8207	Canyon Creek	146	146	130	146	146	111	91	111	111
8208	Bearwallow and Jolley	665	665	507	262	665	337	293	703	703
8209	Bearwallow-Jolley-Harris	114	114	84	59	114	157	119	113	119
8210	Boiler Creek	70	70	85	70	70	314	242	504	504
8211	Dietz	45	45	30	45	45	203	158	248	248
8259	Possum Creek Driveway	45	45	16	5	27	59	47	108	108
8228	Canyon Creek	51	51	51	37	37	64	53	265	265
8101	Kamm Mesa	56	56	8	40	56	98	76	55	76
8102	Whitman	182	63	63	50	63	71	54	54	54
8103	Oates	40	40	19	38	38	96	69	64	64
8104	Beaver-Mamm Common	1,348	632	596	458	632	217	171	217	217
8105	East Divide Common	3,368	2,362	947	2,271	2,362	974	763	1,378	1,378
8106	Scott	165	120	44	85	85	55	43	88	88
8107	Dean Gulch	126	126	76	53	78	66	50	66	66
8108	Smith (lease)	18	18	10	18	18	17	13	17	17
8109	Barr				4	4	24	18	22	22
8110	Kinney Brothers Individual	13	6	4	4	4	5	4	5	5
8111	Shideler	14	14	14	11	11	17	14	14	14
8112	Grass Mesa	83	49	49	27	27	69	51	28	28
8113	Beaver Creek	41	41	41	41	41	30	27	30	30
8114	Franks	37	9	8	9	9	19	15	127	127
8115	Couey 1	4	4	4	3	3	15	14	11	11
8116	Shideler Individual	8	8	8	4	4	10	10	6	6
8117	Pitman	309	146	140	146	146	60	49	60	60
8118	Couey 2	18	18	17	18	18	4	3	20	20
8119	Porcupine Common	495	288	219	194	288	89	68	89	89
8120	Porcupine Individual	28	28	0	7	7	10	7	10	10
8121	Spruce Gulch Common	174	174	97	174	174	69	52	69	69
8122	Smith	150	98	98	19	77	13	11	27	27
8123	Hoaglund	30	17	17	17	17	26	20	24	24
8124	Battlement Creek Common	356	303	152	303	303	146	115	146	146
8125	Dry Creek Pete and Bill	430	372	207	340	372	403	312	763	763
8126	Pole Creek and Cottonwood	122	115	79	96	115	139	108	86	108
8127	Dry Hollow-Reservoir Gulch	923	759	401	501	759	486	387	628	628
8128	Middle Mamm Creek	546	163	158	163	163	89	71	259	259
8129	Upper Wallace Common	160	160	91	160	160	194	156	194	194
8130	Alkali Creek Common	391	200	133	84	128	178	140	96	140
8131	Alkali Gulch	246	160	113	53	53	127	95	77	77
8213	Vulcan	161	161	118	98	161	120	93	219	219
8214	Alkali Creek	168	168	112	132	168	28	23	28	28
8215	Larsen	8	8	6	8	8	7	6	7	7
8216	Delaney	60	60	42	60	60	23	19	23	23
8218	Horse Creek	84	84	0	84	84	110	85	86	86
8219	Bair	61	61	21	39	60	66	50	32	50
8220	Lower Garfield Common	83	83	41	75	75	91	71	65	65
8221	Hilton Individual	12	12	9	12	12	37	27	61	61

Table 7. Livestock and Wildlife Preference, Use, and Allocation by Allotment—Continued

(in animal-unit months)

Allotment Number and Name	Livestock					Wildlife			
	Preference		Existing Use (5-Year Average)[1]	Initial Allocation[2]	Projected Allocation[3]	Objective[4]	Existing Use (5-Year Average)[5]	Initial Allocation[2]	Projected Allocation[3]
	Total	Active							
8222 Upper Garfield Common	2,375	1,496	1,031	624	1,496	197	172	197	197
8223 Larson (exchange of use)						7	6	7	7
8224 Hilton-Porter Common	180	180	182	158	158	86	67	59	59
8225 Hilton 1	95	95	76	53	53	50	39	45	45
8226 Hilton 2	7	7	6	7	7	3	3	3	3
8227 Skeen	25	25	15	5	5	15	15	10	10
8901 Magpie Creek	76	56	46	56	56	169	121	169	169
8902 Webster Park	700	700	309	566	700	678	482	393	482
8903 Hubbard Mesa	830	760	382	248	262	594	427	292	427
8904 Home Ranch	232	0	0	33	33	89	63	22	59
8905 Doodlebug	45	45	27	37	37	37	28	37	37
8907 Rees	687	475	275	475	475	367	268	313	313
8908 JQS Common	5,493	3,963	2,624	1,484	3,963	506	380	506	506
8909 Clough-Alber	1,926	1,090	724	1,090	1,090	258	193	258	258
8910 East Fork Common	3,393	2,064	1,707	1,227	2,064	404	302	404	404
8912 Sharrade Park	40	23	0	23	23	225	160	195	195
8913 Mahaffey Summer	1,110	684	456	505	684	122	92	122	122
8914 Old Mountain	654	399	245	198	399	60	45	60	60
8916 Crawford and Kerlee	10	10	8	0	0	35	26	137	137
8917 Starkey Gulch	77	77	61	1	1	9	9	29	29
8918 Wheeler Gulch	124	124	45	8	8	48	37	52	52
8919 Callahan Mountain Common	188	96	30	80	80	172	124	101	101
8920 Riley Gulch	123	123	87	51	123	44	34	100	100
8922 Smith Gulch	200	200	121	142	169	222	156	111	156
8923 Mahaffey Winter 1 and 2									
8924 Mahaffey Winter 3	1,577	678	617	668	668	324	234	783	783
Subtotal	43,254	30,112	17,965	17,791	26,156	19,619	14,866	18,675	20,022
Roaring Fork Capability Unit									
8205 Mitchell-Oasis	154	154	130	154	154	175	140	175	175
8206 Oasis Creek	100	100	58	100	100	105	86	105	105
8212 Paradise Creek	200	200	200	200	200	240	151	240	240
8217 South Canyon	300	300	135	231	300	129	94	129	129
8301 Cottonwood	552	552	264	119	346	80	64	80	80
8302 Cattle Creek Driveway	333	180	175	98	180	33	26	26	26
8303 Bianco	6	6	6	6	6	5	4	5	5
8304 Upper Place	24	24	3	20	20	3	3	3	3
8305 Squires	3	3	3	3	3	8	8	8	8
8306 Gould	101	101	43	82	82	37	30	35	35
8307 Coryell	13	13	8	13	13	10	8	10	10
8308 Driveway Common	300	300	123	194	300	160	133	133	133
8309 Homestead	60	60	12	26	60	18	15	18	18
8310 Lower Place	64	64	64	19	64	21	16	18	18

8311	Prectel	60	60	12	16	46	11	9	34	34
8312	Hopkins	20	20	20	20	20	27	26	27	27
8313	Lookout Mountain	338	301	0	301	301	123	100	110	110
8314	Heuschkel	28	28	22	28	28	30	21	21	21
8315	Doyal	10	10	10	10	10	10	7	7	7
8316	West Basalt Mountain	295	286	186	169	286	524	394	233	394
8317	Haff Ranch	24	24	12	9	24	89	64	23	64
8318	Badlands	75	75	0	33	75	253	179	77	179
8319	Petre				33	33	207	146	80	128
8320	Sutey	55	55	44	22	55	344	246	102	246
8321	Strook Individual	73	54	1	13	40	137	97	24	97
8322	Rodgers	19	19	4	8	19	33	25	10	25
8323	Diamond Flats Common	589	589	242	232	431	89	59	268	268
8324	Driveway	386	386	170	114	293	38	25	38	38
8325	Motz				21	21	61	38	97	97
8326	Motz				26	26	37	23	82	82
8327	Fryingpan	72	72	14	38	72	199	150	82	150
8328	Wheatley	121	84	29	42	55	600	469	241	469
8329	Fender	67	67	60	67	67	99	64	137	137
8330	Light Hill				88	88	283	161	249	249
8331	Light	472	262	167	262	262	277	182	458	458
8332	Kent				21	21	138	94	63	63
8333	Christensen				0	0	204	141	85	141
8334	Crown Common	388	344	329	344	344	563	368	568	568
8335	Crown	590	267	90	236	267	548	360	312	360
8336	Vasten Homestead Common	249	243	241	107	243	178	115	143	143
8337	Crown Individual	256	151	75	122	151	254	166	134	166
8338	Driveway Common	93	93	88	32	93	18	13	18	18
8339	Fender Individual	65	65	65	59	59	109	73	73	73
8340	Cerise	180	108	43	108	108	70	46	118	118
8341	Prince Creek	570	337	160	238	337	495	322	327	327
8342	Crystal River	750	445	89	264	445	883	566	335	566
8343	Thompson Creek	254	243	0	158	243	553	353	360	360
8344	Mount Sopris	32	32	31	29	29	115	74	69	69
8345	Prince				3		13	10	10	10
8346	Thomas	83	83	79	83	83	156	101	168	168
8347	Potato Bill	16	16	13	16	16	14	9	14	14
8348	North Thompson Creek Common	757	593	457	288	593	648	412	473	473
8349	Red Canyon	90	90	68	12	56	158	124	134	134
8350	Little Woody Creek	99	99	77	23	55	258	200	190	200
8351	Williams Hill				0	0	246	169	79	169
8352	Stevenson	90	90	54	63	90	520	330	239	330
8353	Smith				45	45	57	36	117	117
8401	Besancon Creek				1	1	4	4	5	5
8402	Cantly Homestead	17	17	17	17	17	17	11	17	17
8411	Snowmass Creek	20	20	20	13	13	2	2	1	1
	Subtotal	9,513	7,775	4,213	4,861	7,150	10,716	7,362	7,437	8,875
	Eagle-Vail Capability Unit									
8501	Third Gulch	25	25	25	25	25	61	45	45	45
8502	East Hardscrabble Common	879	870	685	870	870	1,041	868	1,041	1,041
8503	Brush Creek	9	9	3	9	9	6	4	4	4
8504	West Hardscrabble	1,171	1,157	822	800	845	2,141	1,660	1,150	1,660
8505	Eagle River	16	16	12	10	10	11	10	6	6

Table 7. Livestock and Wildlife Preference, Use, and Allocation by Allotment—Continued

(in animal-unit months)

Allotment Number and Name	Livestock					Wildlife			
	Preference		Existing Use (5-Year Average)[1]	Initial Allocation[2]	Projected Allocation[3]	Objective[4]	Existing Use (5-Year Average)[5]	Initial Allocation[2]	Projected Allocation[3]
	Total	Active							
8506 Cottonwood Creek Etc.	787	787	747	787	787	825	616	825	825
8507 Red Hill Common	778	628	583	598	628	1,430	1,114	1,430	1,430
8508 Cottonwood Creek	80	80	80	32	80	28	21	21	21
8707 Ute Creek	430	266	106	250	266	546	430	407	430
8710 Wolcott Isolated Tract	174	40	16	30	30	10	7	17	17
8712 North Bellyache	180	180	180	130	180	387	295	212	295
8716 Williams Individual	30	30	6	30	30	26	28	32	32
8718 Lake Creek	18	18	11	9	9	17	14	7	7
8719 Horse Creek	44	44	44	28	28	26	21	13	13
8720 Fenno	25	25	23	5	5	27	27	7	7
8721 Salt Creek-Bellyache	368	249	241	132	184	849	670	358	670
8722 Salt Creek-Forest	153	64	56	29	64	55	43	88	88
8723 Falk	9	9	9	9	9	16	13	45	45
8727 Squaw Creek				10	10	15	11	11	11
8728 Red Canyon				22	22	40	33	29	29
8734 Bellyache	18	18	2	7	7	40	30	41	41
Subtotal	5,194	4,515	3,651	3,790	4,066	7,597	5,960	5,789	6,717
Castle Peak Capability Unit									
8601 East Castle	2,316	2,316	2,799	2,316	2,316	318	273	318	318
8604 Detweiler	36	36	36	36	36	3	3	3	3
8605 River-Catamount	75	75	75	75	75	141	114	123	123
8606 Piskey	545	430	155	430	430	524	419	524	524
8607 Wheelock Individual Large	43	43	18	43	43	4	4	4	4
8608 Wheelock Individual Small	9	9	5	9	9	1	1	1	1
8609 Castle Creek Individual	170	170	170	170	170	18	15	18	18
8616 Deer Pen	900	900	406	703	757	351	303	454	454
8617 Newcomer	4	4	4	4	4	10	9	16	16
8619 Catamount Common	886	886	886	886	886	494	481	494	494
8620 West Castle Common	522	522	522	522	522	591	499	591	591
8621 Castle	15	15	15	15	15	20	17	20	20
8622 West Castle Peak	7	7	4	7	7	9	8	9	9
8623 East Castle Peak	48	48	21	48	48	16	13	13	13
8625 Bull Gulch Common	360	360	360	360	360	623	576	1,190	1,190
8638 Eiby Creek	112	112	38	112	112	100	80	116	116
8639 Upper Cottonwood	265	214	171	149	214	39	31	39	39
8641 Greenhorn	860	860	517	473	860	642	520	534	573
8642 Trail Gulch	655	321	128	321	321	651	573	1,012	1,012
8643 Blowout	535	535	379	535	535	683	558	683	683
8701 Piney Creek	45	45	10	13	13	25	25	27	27
8702 Wolcott	974	974	263	788	974	523	429	354	429
8729 Pocket				0	0	292	234	168	189

8731	Cabin Gulch	340	340	336	240	340	117	94	68	94
8732	Diamond J	26	26	3	19	26	86	68	20	68
8733	Domantle	65	65	52	36	65	8	7	7	7
8735	Hells Hole	34	34	8	29	29	62	49	49	49
	Subtotal	10,137	9,637	7,631	8,593	9,421	6,856	5,745	7,078	7,318
	King Mountain Capability Unit									
8506	Cottonwood Creek (Burnt Ridge)	168	168	168	152	168	383	356	323	356
8602	L and H Individual	76	76	30	29	29	307	264	105	192
8603	Tepee Creek	27	27	27	8	8	569	489	146	183
8610	East Sunnyside	20	20	19	4	4	38	33	5	5
8611	Sunnyside Individual	100	100	100	62	62	1,087	960	441	488
8612	West Sunnyside	24	24	23	19	19	45	38	29	29
8613	Sunnyside	25	25	25	15	15	467	395	214	302
8614	Spring Creek	125	125	125	60	60	275	225	111	164
8615	River Common	125	38	38	38	38	595	446	373	429
8618	Derby Ridge	100	40	27	28	28	25	23	16	16
8626	Red Dirt	50	50	50	43	50	528	456	387	456
8627	Sugarloaf	50	50	24	50	50	30	27	30	30
8628	Sheep Creek (Colorado Division of Wildlife)				125	125	956	861	790	790
8629	Willow Creek	126	126	57	62	62	769	648	327	467
8630	Irrigated Land-Trail Gulch	132	132	79	132	132	2	5	0	0
8631	Horse Creek	76	76	16	30	30	603	504	199	199
8632	Upper Little Sheep Creek	338	153	71	77	134	52	46	20	46
8633	Upper Hack Creek	384	300	120	300	300	350	313	350	350
8634	Three Springs	60	60	48	50	60	196	147	121	147
8635	Mooney	30	30	24	22	22	35	26	19	19
8636	McKeen Creek	105	105	84	92	92	24	20	24	24
8637	South McKeen Creek	8	8	4	8	8	5	4	5	5
8644	Moniger Ridge	34	34	26	34	34	116	86	63	63
8645	Upper and Lower Jack Spring	50	50	47	22	22	7	7	7	7
8646	Moniger Ridge Skiff	27	27	27	27	27	34	27	34	34
8647	Onion Ridge	930	477	372	203	477	1,602	1,282	551	1,282
8648	Upper Coffeepot	72	72	44	40	72	54	50	54	54
8649	Lower Coffeepot	394	324	224	207	324	774	689	440	689
8652	McCoy				0	0	87	75	18	18
8653	Albertson	186	186	186	35	35	62	58	58	58
8654	Benton	162	162	162	162	162	279	245	270	270
8655	Dude	4	4	4	1	1	52	44	12	12
8656	Gates	13	13	13	10	10	9	8	6	6
8657	Hastings	7	7	7	3	3	54	47	20	20
8658	Holt	105	105	105	81	81	209	190	161	182
8659	Horn	249	249	249	96	96	126	109	42	109
8661	L and H	343	343	343	161	343	820	727	316	727
8662	Black Mountain	109	109	109	32	109	25	21	25	25
8663	McSweeney	53	53	53	53	53	93	84	93	93
8665	Strubi	30	30	30	30	30	15	13	15	15
8666	Visintainer	488	488	488	100	303	422	359	262	359
8667	Bambi	42	42	42	42	42	105	85	320	320
8668	Copper Spur	211	211	211	138	138	133	115	160	160
8695	Old 8660 and 8670				45	45	3	2		
8672	Luark	127	127	127	59	59	723	578	269	461
	Subtotal	5,785	4,846	4,028	2,817	3,801	13,145	11,187	7,231	9,661

Table 7. Livestock and Wildlife Preference, Use, and Allocation by Allotment—Continued

(in animal-unit months)

Allotment Number and Name	Livestock					Wildlife			
	Preference		Existing Use (5-Year Average)[1]	Initial Allocation[2]	Projected Allocation[3]	Objective[4]	Existing Use (5-Year Average)[5]	Initial Allocation[2]	Projected Allocation[3]
	Total	Active							
Total	73,883	56,885	37,488	37,852	50,594	57,933	45,120	46,210	52,593

[1]The 5-year average licensed use from 1975-79.
[2]Initial allocation of existing forage to livestock or wildlife.
[3]Allocation of existing forage plus estimated additional forage expected from vegetation manipulation.
[4]Colorado Division of Wildlife Goals for 1988.
[5]Estimated average wildlife populations in 1976-80.

Season-of-Use Adjustments. Adjust the seasons of use on 53 allotments:

October 15 cut-off date (wildlife crucial winter range)—8005, 8011, 8012, 8103, 8107, 8112, 8115, 8117, 8118, 8120, 8121, 8125, 8213, 8218, 8219, 8316, 8321, 8322, 8331, 8342, 8343, 8349, 8352, 8504, 8506, 8602, 8612, 8632, 8635, 8642, 8647, 8649, 8654, 8655, 8657, 8658, 8659, 8661, 8667, 8668, 8672, 8901, 8907, 8920.

November 15 cut-off date (wildlife winter and summer range)—8506, 8601, 8653, 8656, 8662, 8663, 8665, 8666, 8701.

Spring turnout dates for many allotments are presently determined annually based on range readiness. Place more emphasis on range readiness during implementation of the plan with adjustments based on monitoring if turnout dates are found to be consistently early.

Support

Engineering and fire management support will be required for project layout, design, and implementation. The U. S. Forest Service and Colorado Division of Wildlife will be consulted on allotments managed cooperatively and projects of mutual benefit, especially prescribed burns. Water rights will have to be secured for all water developments. Acquisition of legal access to public land will be needed to open areas to livestock grazing management (see Map 16).

Implementation and Monitoring

Implementing and monitoring the livestock grazing portion of this plan will require several separate actions that overlap in time, some of which are already underway. These actions include (1) allotment categorization; (2) grazing use decisions and monitoring to determine stocking rates; (3) AMPs; and (4) monitoring to determine if selective management (allotment categorization) criteria are being met.

Allotment Categorization. Concurrent with the implementation of this plan, grazing allotments are being placed into one of three categories that define intensity of management: (1) *maintain* current satisfactory condition, (2) *improve* current unsatisfactory condition, and (3) manage *custodially* while protecting existing resource values. These categories will help to concentrate grazing management actions where they are most needed to improve the basic resources or resolve serious resource use conflicts.

The categories will govern the order in which improvement projects are undertaken and allotment management plans written. First priority will be allotments in *improve* category; second, in *maintain* category; and third, *custodial* category.

The five standard criteria being used to categorize allotments are range condition, resource potential and present productivity, presence of resource use conflicts or controversy, opportunity for positive economic return on public investment, and present management situation. Comments solicited from the general public, ranchers, and the District's Grazing Advisory Board were used to help refine the BLM's five standard criteria to fit the local situation and to develop other site-specific criteria.

Maintain Category Criteria:

- Present range condition is satisfactory.
- Allotments have moderate or high resource production potential and are producing near their potential (or trend is moving in that direction).
- No serious resource-use conflicts or controversy exists.
- Opportunities may exist for positive economic return from public investments.
- Present management appears satisfactory.
- Other criteria appropriate to environmental impact statement area.

Improve Category Criteria:

- Present range condition is unsatisfactory.
- Allotments have moderate to high resource production potential and are producing at low to moderate levels.
- Serious resource-use conflicts or controversy exists.
- Opportunities exist for positive economic return from public investments.
- Present management appears unsatisfactory.
- Other criteria appropriate to environmental impact statement area.

Custodial Category Criteria:

- Present range condition is not a factor.
- Allotments have low resource production potential and are producing near their potential.
- Limited resource-use conflicts or controversy exist.
- Opportunities for positive economic return from public investments do not exist or are

constrained by technological or economic factors.

- Present management appears satisfactory or is the only logical practice under existing resource conditions.
- Other criteria appropriate to environmental impact statement area.

Grazing Decisions and Monitoring. Soil Vegetation Inventory Method (SVIM) and Initial Stocking Rate programs were used to develop BLM estimated initial stocking rates for each allotment. Prior to issuing grazing decisions, permittees will be consulted to decide how their allotments are categorized and explain the criteria used. Initial stocking rates for each allotment based on estimated initial stocking rates, average licensed use, and active preference will also be determined at that time.

If no adjustments in stocking rate are necessary or if reductions are mutually agreed upon, the BLM will issue the final grazing decision without monitoring. However, in cases of disagreement, the BLM will issue an initial decision and monitor the allotment to determine the proper stocking rate prior to issuing the final decision. The initial decision and the monitoring program to arrive at the stocking rate will be published in a rangeland program summary.

After stocking rates are determined, increases or suspension of grazing preference will be implemented over a 5-year period (after consultation with affected permittees and other affected interests) unless an agreement is reached to implement in less than 5 years. Suspension of preference will be implemented through documented agreement or by decision. The initial reduction will be taken on the effective date of the agreement or decision, with the balance taken in the third and fifth years.

Monitoring studies to establish stocking rates will include forage use, actual use reports from each permittee, and climate. The utilization studies will include browse use in wildlife ranges. Pellet group transects might also be used to help determine wildlife use in the area. Trend and utilization transects are already established on 38 allotments. Browse transects are in place on 17 allotments.

Allotment Management Plans. AMPs prescribing grazing management activities will be written and implemented on allotments in accordance with priorities established in this plan. AMPs will establish objectives for managing soil, vegetation, and water resources to improve or maintain resource conditions and resolve livestock grazing management problems consistent with land use plan objectives and constraints. The AMPs will specify the terms, conditions, and methods or practices permitted to meet the requirements of the key plant species, prevent soil disturbance, and meet water quality requirements within the allotments. The sophistication of an AMP may vary depending on resource conditions and the objectives of other resources identified in this plan. AMPs will include the limits of flexibility within which permittees or lessees can adjust their grazing operation without prior approval from the authorized officer and specify the types and amount of range improvements that will be necessary to support livestock grazing activities. All AMPs will be periodically evaluated to determine whether resource management plan and AMP objectives are being achieved and to assess resource conditions. AMPs may be revised if the evaluation shows that the objectives are not being achieved.

Monitoring for Selective Management Criteria. A supervision and monitoring plan will be developed to ensure that allotments within each category—maintain, improve, and custodial—are checked periodically to determine resource conditions and whether criteria are still being met.

Priorities of Implementation

Priority 1. Issue final grazing decision where no reductions are required or reductions are negotiated.

Priority 2. Monitor allotments to establish stocking rates where BLM data indicate reductions in levels of grazing are necessary or data are inconclusive.

Priority 3. Implement AMPs according to selective management policy. Place all allotments within three categories—improve, maintain, or custodial—based on five standard criteria:

- Range condition.
- Resource potential and present productivity.
- Presence of resource use conflicts and controversy.
- Opportunity for positive economic returns.
- Present management situation.

Priorities for AMP implementation are as follows:

1. Complete partially completed AMPs.
2. Improve category allotments.
3. Maintain category allotments.
4. Custodial category allotments.

Forest Management

Objective

To manage all suitable commercial forest land and woodland to meet sawtimber and fuelwood demand and maintain stand productivity.

Planned Management Actions

Manage 17,905 acres of commercial forest land and 82,407 acres of woodland (Table 8). Map 8 shows locations of forest land suitable for management.

Table 8. Summary of Planned Forest Management Actions

Planned Management Actions	Commercial Forest Land[1]		Woodland[2]	
	(acres)	(million board feet)	(acres)	(cords)
Suitable for management	17,905		82,470	
Unsuitable for management[3]	27,735		131,840	
Annual allowable harvest		1.8		6,465

[1]Includes lodgepole pine, Engelmann spruce, Douglas-fir, and ponderosa pine.
[2]Includes pinyon pine and juniper (3,535 cords), aspen (2,790 cords), and subalpine fir (140 cords).
[3]Based on multiple use and timber production capability classification restrictions.
Note: With the completion of the timber production capability classification, revision in the annual allowable harvest may be necessary.

The estimated annual allowable woodland harvest of 6,465 cords includes aspen and subalpine fir fuelwood for which little demand has been realized. Since the present domestic and commercial demand for fuelwood (1,800 cords annually) has been limited almost exclusively to pinyon-juniper, it is expected that actual harvests will be considerably less than 6,465 cords. However, the harvest level of 6,465 cords is presented as an optimum level for a sustained yield woodland management program. The fuelwood market and demand for domestic wood will guide the actual harvest of woodland products. It is assumed that the majority of fuelwood sold will consist of pinyon-juniper based on past demands. Initial sales of aspen fuelwood will be considered in an attempt to spur the aspen market and improve wildlife habitat and possibly result in temporary increases in water yields.

Manage all forest land supporting commercial forest land and woodland species, including the five forest management units (King Mountain, Black Mountain, Castle Peak, Seven Hermits and Naval Oil Shale Reserve). Major commercial species include lodgepole pine, Engelmann spruce, Douglas-fir, and ponderosa pine (commercial forest land) and pinyon and juniper (woodland). Aspen and subalpine fir are not currently considered major commercial species.

Manage forest land to minimize losses of, or damage to, forest resources from insects and disease. Practices that will be used in managing the suitable forest land are listed in Appendix A. Multiple use and timber production capability classification restrictions prohibiting the harvesting of both commercial forest land and woodland are shown in Table 9.

Table 9. Commercial Forest Land and Woodland Multiple Use Restrictions

Capability Unit	Acres	Reason Unsuitable for Harvest
Garfield	71,085	Municipal watersheds; debris flow hazard zone; highly erosive soils; recreational non-motorized zones
Roaring Fork	12,945	Debris flow hazard zones; Thompson Creek Natural Environment Area; Eagle Mountain Wilderness Study Area; highly erosive soils
Eagle-Vail	14,005	Highly erosive soils
Castle Peak	34,910	Bull Gulch Wilderness Study Area; highly erosive soils
King Mountain	26,630	Hack Lake Wilderness Study Area and recreational non-motorized zone; Deep Creek Area of Critical Environmental Concern; highly erosive soils
Total	159,575	

Support

Cadastral survey and engineering support will be needed to help design and lay out timber sales and access roads. Specific support needs are itemized in the resource area 5-year timber sale plan which is on file in the resource area office. This sale plan is updated annually. Fire management support will be needed for management of natural fire in meeting forest management resource objectives. Acquisition of legal access to public land will be needed to open areas to commercial forest land management (Map 16). Acquisition of legal access to public land to open areas for fuelwood will only be pursued if the access also benefits other resource values.

Implementation and Monitoring

Land use allocations planned for forest management became effective upon approval of this plan.

Activity plans will define the resources on the unit, state specific management objectives, specify planned actions, coordinate various resource values, and identify harvest levels, cutting cycles, and silvicultural practices for the commercial forest or woodland resource.

Sawtimber and fuelwood sales, timber stand improvement, reforestation, and road construction are examples of specific actions proposed in activity plans. Manuals and policy will offer specific guidance for implementing these actions. Environmental assessments and forest management plans will further identify project implementation and mitigation measures.

Periodic forest inventories will be conducted in an effort to monitor the forest and woodland resources. Inventory data will be incorporated into activity plans and will assist in defining the allowable harvest base.

Monitoring of these projects will ensure proper implementation. The basic process of monitoring for forestry practices involves on-site inspection of the project. Generally, a pre-work conference is conducted to familiarize the contractor or purchaser with the project area, contract requirements, and other project specifics. During the project life, periodic inspections of the work performance and progress are conducted by the forester. At the end of the project, a final inspection is generally conducted to check for work quality and proper completion of all contract requirements. An assessment of the project is made at that point, and recommendations for amending future like projects are made to ensure future successes and streamlining.

Commercial forest and woodland products will be offered for sale. Competitive bidding will be the common method for selling commercial sawtimber and fuelwood. Fuelwood, posts, poles, wildings, and Christmas tree permits will also be sold to the general public.

Priorities of Implementation

Priority 1. Revise existing forest management plans to reflect management decision of the resource management plan (Black Mountain, King Mountain, Hardscrabble plans).

Continue the implementation of existing forest management plans.

Priority 2. Prepare forest management plans on the two remaining forest management units (Castle Peak and Oil Shale).

Prepare woodland management plans for large tracts of manageable woodland. Factors considered when determining the priority of management areas include:

- Accessibility to markets.
- Demand for woodland products.
- Opportunities to complement other resources.

Priority 3. Prepare timber sale and fuelwood sale plans for remaining isolated tracts of forested land requiring management actions. No forest or woodland management plan will be necessary for these areas unless a long-term intensive management program is to be implemented. The following items will aid in the determination of priorities for implementation of these tracts:

- Accessibility.
- Stand conditions.
- Demand for forest products.
- Species in the area.
- Needs of other resource programs.

Recreation Resource Management

Objective

To ensure the continued availability of outdoor recreational opportunities which the public seeks and which are not readily available from other sources, to reduce the impacts of recreational use on fragile and unique resource values, and to provide for visitor safety.

Planned Management Actions

Manage recreation resources and activities throughout the resource area. Adopt recreation opportunity spectrum (ROS) management classes as shown on Map 9 and described in Appendix C. Review future project proposals to determine whether or not planned management actions are consistent with the class to identify possible mitigation measures. Each class also indicates the type of recreational setting one can expect to find in the area.

Table 10 shows the acreage within each ROS class.

Table 10. Summary of Recreation Opportunity Spectrum (ROS) Classes

ROS Class	Acres	Percent of Total
Primitive	722	0.1
Semi-primitive non-motorized	17,768	3.2
Semi-primitive motorized	276,713	48.9
Roaded natural	237,147	41.9
Semi-urban	33,045	5.8
Urban	647	0.1

Maintain existing recreational facilities as long as they remain cost effective. Develop new recreational facilities to meet present and future demands, protect resource values, and provide for visitor safety. Table 11 lists existing and proposed facilities and designations which are displayed on Map 10.

Table 11. Planned Designations and Recreational Facilities

Designation, Facility, or Service	Existing	Proposed
Number of developed sites (campgrounds, overlooks, highway rest stops)	4	5
Number of undeveloped recreation sites	1	.....
Number of developed river access sites	3	6
Number of undeveloped river access sites	1	.....
Number of trails	2	5
Number of trailheads	0	6
Number of primitive recreation sites	0	7
Number of snowmobile parking areas	0	4
Acres identified as recreation management areas	0	16,140
(Bull Gulch)	0	(10,214)
(Hack Lake)	0	(3,456)
(Deep Creek)	0	(2,470)
Thompson Creek Natural Environment Area (acres)	4,286	4,286
Permit program for commercial and competitive floatboating use	yes	yes
Upper Colorado River Special Recreation Management Area	yes	yes
Acquisition of private land	no	[1]yes
Number of off-road vehicle use areas	0	[2]1
Number of interpretive overlooks	0	1

[1]Approximate location: Twin Bridges.
[2]Acreage not yet determined.

Submit withdrawal proposal to the Secretary of the Interior to withdraw the Deep Creek and Thompson Creek areas for recreation purposes.

Close 2,560 acres in Deep Creek to oil and gas surface facilities and mineral sales and close 3,480 acres in Hack Lake and 9,778 acres in Bull Gulch to oil and gas surface facilities.

Identify Bull Gulch, Hack Lake, the upper Colorado River, and Deep Creek as recreation management areas (RMAs). Designate Thompson Creek as a *natural environment* area.

Acquire legal access to most large public land parcels to open public land to public use (Map 16).

Support

Fire support will be needed for managing natural fire in meeting recreation resource objectives and for protecting unique and fragile recreation resources. Cadastral and engineering support will be needed to lay out and design access roads. Acquisition of legal access to public land will be needed to open areas to recreation management.

Cooperation and coordination with the Colorado Division of Parks and Recreation; the U. S. Forest Service; Garfield, Pitkin, and Eagle Counties; and adjacent cities will be needed for the development and maintenance of proposed trails and snowmobile parking areas. Engineering will be required for design and construction of recreational facilities. Cadastral survey and appraisal will be necessary for acquisition of private land.

A cooperative agreement will be needed with the owner of the property near Sheep Gulch to use the area as a river access site.

Implementation and Monitoring

ROS classes became effective upon approval of this plan. Recreation management plans will be prepared for special RMAs and designated areas; existing management plans will be revised, if necessary to be consistent with this plan. Site plans will be prepared for new facility developments. These plans will include detailed engineering, site location, cost-benefit analysis, and detailed environmental analyses of the proposal.

The condition of recreation sites, including resource damage, will be inspected periodically. Visitor use will be sampled using various methods including selected road and trail traffic counters and visitor registers. Recreation management plans will be reviewed periodically to determine if revisions are necessary because of changing conditions.

Priorities of Implementation

Priority 1. Manage extensive RMAs to provide visitor information, minimal sanitation facilities, and access. Also manage extensive RMAs to resolve management issues and for off-road vehicle (ORV) use. (Extensive RMAs are areas where recreation is not the principal management objective but an issue of some significance.) Complete ORV designations within one year.

Consider the following when setting priorities in extensive RMAs:

- The number of people served or benefited.
- The need to manage visitor use.
- The health and safety of the visitor.
- The need for resource protection.

Adjust priorities as necessary. For example, acquire public access at the same time that access is acquired for a timber sale, even though that public access need is not a priority 1 recreation need.

Priority 2. Manage special RMAs, first, to provide scarce recreational opportunities not available elsewhere and, second, to reduce resource damage, solve visitor health and safety problems, and mitigate conflicts. The two special RMAs in the resource area are the upper Colorado River and Thompson Creek. (Special RMAs are areas where recreation is the principal management objective.)

The following areas will be given first priority for management:

- Areas having Congressional mandates.
- Rivers and water-based recreation where BLM has clear jurisdiction.
- Areas with outstanding resource demand which cannot be satisfied by other private or government entities.
- Areas where capacity is regularly exceeded and significant resource values are threatened.

Cultural Resource Management

Objective

To protect the cultural and historical values in the resource area from accidental or intentional destruction and give special protection to high value cultural resource sites.

Planned Management Actions

Nominate approximately 4,178 acres known as the Blue Hill Archaeological District for designation on the *National Register of Historic Places* and designate as an area of critical environmental concern. This designation is made because of a large number of archaeological sites located within the area have the potential to yield information important to the prehistory of north-central Colorado. Manage the area as follows: designate as a sensitive zone for utility and communication facilities, designate as a fire exclusion zone, and restrict off-road vehicles to existing roads and trails. Classify the area as a critical watershed because of the soil erosion hazard.

Actively manage selected sites identified as having high value for management as outlined in the Glenwood Springs Cultural Resource Management Guide. Manage the remaining sites as prescribed by law and policy to protect cultural resource values.

Inventory project areas for cultural resources prior to project approval. Take measures to protect any cultural resources found.

Support

Fire management will be needed for management of natural fire in meeting cultural resource objectives.

Implementation and Monitoring

See Priorities of Implementation.

Priorities of Implementation

Priority 1. In accordance with existing policy, consider cultural resources on all earth-disturbing projects. Use the predictive model when appropriate. Field examinations may not be required when the model indicates that no cultural resources are located in the project area.

Priority 2. Actively manage high priority sites according to the Glenwood Springs Cultural Resource Management Guide: record sites, collect data, monitor to update condition and priority of sites, stabilize deterioriating sites, and excavate eroding sites.

Consider the following when setting priorities:

- The capability of the site to yield information important to the prehistory or history of the nation, state, or local area.
- The fragile or eroding condition of the site. Sites with fragile or exposed features may take priority over stable sites. Examples are rock art, wickiups, eagle traps, scaffolds, and sites with eroding features.

Priority 3. Annually write overviews and summaries of cultural resource management efforts, including an overview of the archaeology of the Glenwood Springs Resource Area.

Paleontological Resource Management

Objective

To manage the paleontological resource program as required by law and policy to protect significant paleontological values.

Planned Management Actions

Inventory projects for paleontological resources in areas of high paleontological values prior to project approval. Take measures to protect any significant paleontological resources found.

Support

No support will be required.

Implementation and Monitoring

In areas requiring inventory, a survey will be conducted prior to approval of projects involving surface disturbance.

Priorities of Implementation

None.

Wilderness Management

Objective

To determine the suitability or nonsuitability of wilderness study areas (WSAs) for wilderness designation.

Planned Management Actions

Map 11 shows the identified WSAs and the suitability recommendations. Table 12 shows the acreage in each WSA that will be recommended as preliminarily suitable and nonsuitable for wilderness designation.

Table 12. Summary of Wilderness Preliminary Recommendations

(in acres)

Wilderness Study Area[1]	Suitable	Nonsuitable
Eagle Mountain[2]	330	0
Hack Lake[3]	10	3,350
Bull Gulch[4]	9,778	4,586
Castle Peak	0	11,940
Total	10,118	19,876

[1]Includes areas considered for wilderness designation under Sections 202 and 603 of the *Federal Land Policy and Management Act of 1976.*

[2]Would be added to the existing Maroon Bells-Snowmass Wilderness administered by the U. S. Forest Service.

[3]Would be added to the existing Flat Tops Wilderness administered by the U. S. Forest Service.

[4]The Bull Gulch boundary was modified to exclude 636 acres of state-owned minerals.

Recommend 9,778 acres in Bull Gulch WSA as preliminarily suitable for wilderness designation (under Section 603 of the *Federal Land Policy and*

Management Act of 1976 (FLPMA)) pending mineral survey.

Recommend 330 acres in Eagle Mountain WSA and 10 acres in Hack Lake WSA as preliminarily suitable for wilderness designation (under Section 202 of FLPMA) pending mineral survey.

Recommend 16,526 acres (4,586 in Bull Gulch and 11,940 acres in Castle Peak) as preliminarily nonsuitable for wilderness designation under Section 603 of FLPMA. These areas will be managed under *Interim Management Policy and Guidelines for Lands Under Wilderness Review* pending Congressional action.

Release 3,350 acres of Hack Lake WSA from further wilderness consideration.

Recommend administration of the Eagle Mountain WSA and the preliminarily suitable portion of Hack Lake WSA for transfer to the U. S. Forest Service upon designation as wilderness.

Recommend the 636 acres excluded from the Bull Gulch WSA as a suitable addition to the Bull Gulch Wilderness (should it be designated by Congress) provided the state-owned minerals can be exchanged. The State of Colorado has indicated a willingness to make such exchanges in BLM wilderness areas (State of Colorado Board of Land Commissioners 1983).

Support

Mineral surveys by the U. S. Geological Survey and the U. S. Bureau of Mines will be required for WSAs recommended as preliminarily suitable for wilderness designation as requested by the BLM Director. Fire management support will be needed for management of natural fire in meeting the resource objective and for the protection of unique and fragile resources.

Implementation and Monitoring

The nonsuitable portion of the Hack Lake WSA was released from further wilderness consideration and managed for other resource values upon approval of this plan. The suitable portion of the Hack Lake WSA and the entire Eagle Mountain, Bull Gulch, and Castle Peak WSAs will continue to be included in the wilderness review process.

A wilderness study report identifying the preliminary recommendations for each WSA will be prepared and submitted to Congress. A final environmental impact statement on the wilderness portion of this plan will be prepared and will accompany the wilderness study report. Following Congressional action, a wilderness plan will be prepared for any area designated as wilderness by Congress. Those areas not designated will be managed for other values as identified under this plan.

Until Congress makes its decision on whether or not to designate an area as wilderness, the BLM will manage WSAs studied under Section 603 of FLPMA "so as not to impair the suitability of such areas for preservation as wilderness." The policy and guidance for this management is contained in the BLM's *Interim Management Policy and Guidelines for Lands Under Wilderness Review*. Current BLM policy is to similarly protect WSAs studied under Section 202 of FLPMA that are being considered for wilderness designation.

Planned projects in WSAs will be evaluated to ensure compliance with interim management policy. WSAs will be patrolled periodically to detect and prevent unauthorized actions.

Priorities of Implementation

None.

Visual Resource Management

Objectives

To maintain existing visual quality throughout the resource area and protect unique and fragile resource values.

Planned Management Actions

Designate visual resource management (VRM) classes as shown on Map 13. Manage visual resources on public land according to the objectives for each class. Table 13 shows the approximate acreage within each class.

Table 13. Summary of Visual Resource Management Classes

Class	Acres	Percent of Resource Area
Class I	13,470	2
Class II	225,106	40
Class III	149,112	26
Class IV	176,690	31
Class V	1,664	1

Review future project proposals to determine whether or not proposed management actions are

consistent with the designated VRM classes to identify possible mitigation measures.

Designate Deep Creek (2,470 acres) and Bull Gulch (6,714 acres) as areas of critical environmental concern (Map 12) and manage as follows:

Deep Creek

- Designate as unsuitable for utility and communication facilities.
- Manage under visual resource management Class I objectives.
- Identify as a recreation management area.
- Identify as a potential peregrine falcon introduction site.
- Prohibit vegetation manipulations for livestock, wildlife, and timber management.

Bull Gulch

- Designate as unsuitable for utility and communication facilities.
- Close the area to off-road vehicle use.
- Designate as fire management zone-ecosystem management area.
- Identify as a recreation management area.

Manage these areas and the Thompson Creek Natural Environment Area under Class I objectives.

Do not identify specific visual modifications for rehabilitation.

Support

Fire management support will be needed for management of natural fire in meeting the resource objective and for the protection of unique and fragile resources.

Implementation and Monitoring

All VRM classes became effective upon approval of this plan. Planned projects will be evaluated to determine whether they are compatible with the designated VRM class. Measures will be taken to mitigate adverse visual impacts. Incompatible projects whose impacts cannot be mitigated may be rejected.

Approved projects will be monitored to ensure compliance with mitigation measures, including rehabilitation.

Priorities of Implementation

None.

Land Tenure Adjustments

Objective

To increase the overall efficiency and effectiveness of public land management by identifying public land suitable for retention and disposal.

Planned Management Actions

Retain 550,542 acres in public ownership. Of this total, manage 62,780 acres in cooperation with other government agencies. Cooperative management areas can be managed through cooperative agreements, memorandums of understanding, or withdrawals. They also can be exchanged with other government agencies if exchange best meets management objectives and public needs.

Dispose of 15,500 acres. Public land in disposal zones will be disposed of through public sale, state selections, Recreation and Public Purpose Act purchases, and exchange. Table 14 shows the acres identified under each zone displayed on Map 14.

Table 14. Summary of Land Tenure Adjustment Zones

Zone	Acres	Percent of Resource Area
Retention Zone	550,542	97.3
(Public Land Management)	(487,762)	(86.2)
(Cooperative Management)	(62,780)	(11.1)
Disposal Zone	15,500	2.7

Support

Support will be needed for conducting cadastral surveys and appraisal reports to locate and estimate the value of public land identified for disposal.

Implementation and Monitoring

Recommendations for land tenure management zones were adopted upon plan approval.

The amount and location of public land within disposal zones offered for sale annually will be determined by Congressional appropriations for a land sale program, the priority set for the sale program, staffing, and other work loads. Probably no more than 7,000 acres will be offered for sale in any given year, and disposal program objectives prob-

ably will be achieved within two to five years. Site-specific environmental assessments will be written for proposed disposal actions prior to land sales. A 45-day public comment period is required between the notification of a land sale and the actual sale.

Priorities of Implementation

Appendix D outlines management considerations to be used in retention zones. Following are the priorities for disposal. To increase efficiency in administering the land sales program, lands will be offered in geographic sale units.

Priority 1. Parcels within or adjacent to existing or approved residential development on private land.

Priority 2. Parcels with the fewest encumbrances—grazing leases, mining claims, and the like.

Priority 3. Parcels where an offering would result in other public benefits.

Priority 4. Parcels where disposal would result in resolution of existing trespass.

Priority 5. Parcels where interest has been expressed and those most likely to result in a consummated sale.

Off-Road Vehicle Management

Objective

To protect fragile and unique resource values from damage by off-road vehicle (ORV) use and to provide ORV use opportunities where appropriate.

Planned Management Actions

Leave 393,615 acres (69 percent) of public land open to motorized vehicle use (Map 15).

Close 20,426 acres (4 percent) to motorized vehicle use.

Limit motorized vehicle use to existing roads and trails, designated roads and trails, and certain seasons of use on 152,001 acres (27 percent).

Search for and designate a suitable area near Parachute/Battlement Mesa for intensive motorized vehicle use.

Designations will be in effect year round except for the seasonal limitations (Map 15).

Closures and limitations will not apply to federal, state, and local law enforcement officers; members of organized rescue or fire-fighting forces in the performance of official duties; or persons with a permit specifically authorizing the otherwise prohibited use.

Support

Law enforcement support will be needed to enforce closures and limitations.

Implementation and Monitoring

All ORV designations went into effect upon approval of this plan. An implementation plan will be prepared to define the specific actions (for example, signs, barriers, and identification of roads and trails on which use is allowed in areas limited to designated roads and trails) needed to implement the ORV decisions. Notices describing the ORV designations will be published in the *Federal Register* and in local newspapers. Maps showing the designations will be printed and made available to the public.

Closed and limited areas will be monitored for compliance with designations. Open and limited areas will be monitored to ensure no unacceptable resource damage occurs. Additional restrictions will be placed on ORV use that causes unacceptable damage.

Priorities of Implementation

None.

Transportation Management

Objective

To provide access to public land by acquiring those legal rights on nonpublic land that are essential to implement BLM planned actions.

Planned Management Actions

Acquire legal access into areas of public land where legal access does not exist (Map 16).

Use and improve existing roads and trails (Map 16) in these areas where feasible. Construct new roads and trails where none exist or where existing roads and trails are inadequate for BLM needs. (Comply with road construction standards and de-

signs listed in BLM Manual 9113.) Maintain 258 miles of road and 48 miles of trail—the amount needed to serve the area.

Support

Cadastral survey for boundary determination and corner identification will be necessary to accurately plot easement locations. Appraisal reports will be needed to identify acquisition costs. Cartographic support will be needed for plat preparation. Legal support will be needed from the solicitor's and U. S. Attorney's offices for title and acquisition problems.

Implementation and Monitoring

Prior to implementation, a route analysis of each access acquisition proposal will identify feasible alternate routes. The route analysis will consider environmental impacts, user costs, safety, construction and maintenance costs, acquisition costs (if applicable), suitability of soil and geology for construction, and any other factors relevant to selection of the location.

BLM personnel will monitor all road and trail construction, maintenance, and improvement to ensure road standards are followed and unnecessary impacts to the environment are avoided.

All right-of-way applications made by outside parties for roads or trails on public land will be reviewed and compared with the resource management plan. When appropriate, applications compatible with identified access needs may require reciprocal easements across the applicant's land to provide access to public land.

Priorities of Implementation

Table 15 shows the order in which easements will be acquired. The order is based on a cumulative point system as explained below:

Forestry, wildlife, livestock grazing, recreation, and critical watersheds identified needed easements and then set priorities for acquiring those easements. Priorities were based on demand (public served), amount of public land that would become available, input from other agencies, scarcity of the resource, and individual resource management program implementation schedules.

The individual priorities were then statistically weighted to give equal value to differing numbers of needs and prioritized on a cumulative point basis.

Table 15. Order of Easement Acquisition

Access	Benefiting Resource					Cumulative Points
	Forestry	Critical Watersheds	Recreation	Wildlife	Livestock Grazing	
Northwest Castle	+	+	+	+	+	1,983
North Castle	+	+	+	+	+	1,857
Hardscrabble	+	+	+	+	+	1,806
Pisgah		+	+	+	+	1,243
Holgate Mesa	+		+	+	+	989
Rifle Gap	+	+	+	+		976
Storm King	+		+	+	+	975
West Elk	+		+	+	+	895
Consolidated	+			+	+	864
Dry Hollow	+	+		+	+	824
Twin Bridges			+	+		792
Dry Creek	+	+	+	+	+	727
Posey Creek	+	+		+	+	718
Alkali Creek	+	+	+	+		711
Rifle Falls	+			+	+	672
Tom Creek	+			+		670
Flatiron	+			+	+	600
Jackson Gulch	+			+	+	562
Center Mountain	+	+	+	+	+	552
32-Mile Gulch	+			+		548
Red Hill	+			+		512
Horse Mountain	+		+	+		510
Uncle Bob	+	+		+	+	476
Canyon Creek	+	+		+		466
Thompson Creek		+	+			462
Wallace Creek	+		+	+		442
Hughes	+			+		434
Burns			+	+		411

Table 15. Order of Easement Acquisition—Continued

Access	Benefiting Resource					Cumulative Points
	Forestry	Critical Watersheds	Recreation	Wildlife	Livestock Grazing	
Mamm	+		+	+		401
North Elk				+	+	396
State Bridge			+			378
Basalt	+			+		354
North Basalt				+		300
Fisher Creek	+			+		242
Devils Gulch	+			+		94
Salt Creek			+	+		57
Paradise Creek				+		48

+ = resource programs benefiting from access acquisition

Priorities will be adjusted when opportunities arise to obtain reciprocal easements providing access with time and money savings to the government.

Utility and Communication Facility Management

Objective

To respond, in a timely manner, to requests for utility and communication facility authorizations on public land while considering environmental, social, economic, and interagency concerns.

Planned Management Actions

Designate 443,993 acres (78 percent) of public land suitable for consideration, 101,293 acres (18 percent) sensitive, and 20,756 acres (4 percent) unsuitable for utilities and communication facilities development. The sensitive acreage does not include visual resource management Class II areas shown on Map 13 or public land along the Colorado River where location of public land is in question. Suitable, sensitive, and unsuitable zones are shown on Map 17.

Suitable zones are areas where no restrictive resource values have been identified. Sensitive zones are areas where existing resource values must be mitigated prior to location of utilities or communication facilities. Unsuitable zones are areas where existing fragile or unique resource values preclude location of utilities and communication facilities. Table 16 shows the resource values that contributed to designation of these zones.

Designate Monument Peak, Castle Peak, Doghead Mountain, Sunlight Mountain (in conjunction with the White River National Forest), Bellyache Ridge, and Lookout Mountain as communication sites and prepare management plans.

Support

Engineering support will be needed for analysis of proposed projects. Appraisal staff support will be needed for valuation of rights-of-way.

Implementation and Monitoring

Upon approval of this plan, unsuitable, sensitive, and suitable zones became effective. This plan will be provided to applicants for land use authorizations to use in designing their proposed facilities.

In all zones, locations of proposals adjacent to compatible existing facilities or upgrading of existing facilities will be encouraged.

This plan will be used to determine general locations for major utility systems. Applications for land use authorizations will be compared with the zones and then processed on a case-by-case basis as outlined in BLM regulations.

Unsuitable Zones. Applications within unsuitable zones will be rejected, except where valid existing rights require granting of authorization.

Sensitive Zones. Applications within sensitive zones will be considered only if mitigation measures can reduce the potential impacts of the proposal on the identified sensitive resource. All approved authorizations will include stipulations to mitigate impacts to sensitive resources and site-specific impacts associated with the proposed facility. If impacts cannot be mitigated, applications will be approved in another suitable location or rejected. In most cases, applicants will be encouraged to seek alternate locations where available.

Table 16. Resources Contributing to Identification of Management Zones for Utility and Communication Facilities

Symbol on Map	Value Present	Designation
Wildlife		
BE/BH	Bald eagle/blue heron high-use areas, (nest, perch, and roost trees)	Sensitive
SG	Sage grouse strutting grounds	Sensitive
SG	Sage grouse winter-use and brood areas	Sensitive
EC	Elk calving areas	Sensitive
P	Peregrine falcon introduction areas	Sensitive
R	Raptor concentration areas	Sensitive
AH	Aquatic habitat	Sensitive
	Riparian areas (not shown on map)	Sensitive
BS	Bighorn sheep study area	Sensitive
RO	River otter introduction area	Sensitive
Recreation		
SPNM	Primitive and semi-primitive non-motorized areas	Sensitive
RS	Recreation sites	Sensitive
SRMA	Special recreation management areas	Sensitive
NEA	Thompson Creek Natural Environment Area	Unsuitable
PNV	Primitive and natural values	Unsuitable
Wilderness		
WSA	Wilderness study areas identified preliminarily suitable for wilderness	Unsuitable
WSA	Wilderness study areas recommended nonsuitable for wilderness will be managed under BLM's *Interim Management Policy and Guidelines for Lands Under Wilderness Review* (December 1979)	Sensitive
Hydrology		
GDF	Glenwood Springs debris flow hazard zone	Sensitive
MW	Municipal watersheds	Sensitive
	Floodplains (not shown on map)	Sensitive
	Wetlands (not shown on map)	Sensitive
Visual		
	Sensitive viewsheds, visual resource management Class I areas (see the Visual Resource Management section and Map 13)	Unsuitable
	Sensitive viewsheds, visual resource management Class II areas (see the Visual Resource Management section and Map 13)	Sensitive
Cultural Values		
BHAD	Blue Hill Archaeological District	Sensitive
Vegetation		
SP	Sensitive plant species, areas of known occurrence	Sensitive

Suitable Zones. Applications for proposals within suitable for consideration zones will be processed on a case-by-case basis as outlined in BLM regulations. All approved authorizations will include stipulations to mitigate site-specific impacts associated with the proposed facility. If site-specific impacts cannot be mitigated, applications will be approved in another suitable location or rejected.

Priorities of Implementation

None.

Fire Management

Objective

To reduce losses, complement resource management objectives, and sustain the productivity of the biological ecosystems through fire management.

Planned Management Actions

Designate three zones (Map 18 and Table 17) within the resource area for management of wildfire—fire exclusion, fire management, and fire suppression.

Table 17. Fire Management Zones

Zone	Acres	Percent of Resource Area
Fire Exclusion Zone	25,280	4
Fire Management Zone	241,090	43
(Vegetation Manipulation Area)	(217,790)	.....
(Ecosystem Maintenance Area)	(23,300)	.....
Fire Suppression Zone	299,672	53

In fire exclusion zones, take immediate actions to suppress all wildfire to protect life, property, and resource values. If needed; develop hazard reduction projects and prevention programs to reduce the risk of wildfire occurring.

In fire management zones, use wildfire when appropriate to maintain natural ecosystems or manipulate vegetation types. Within this zone, evaluate possible detrimental and beneficial impacts, burning conditions, and location of each fire to determine suppression techniques needed to control the fire.

In fire suppression zones, take immediate actions to control all wildfire. Manage uncontrolled fires to minimize environmental damage and rehabilitation cost.

Support

Support will be needed from the U. S. Forest Service, Colorado State Forest Service, BLM's Western Slope Fire Operations Office, and local fire districts for presuppression and suppression planning and equipment.

Implementation and Monitoring

A fire management plan will be written for the fire management zones. Specific zone boundaries and fire management prescriptions will be identified to meet the objectives for the zones based on resource values within the zone.

Implementation of Priorities

Priority 1—Fire Exclusion Zone. Consider the following in fire exclusion zones.

- Human health and safety.
- Potential fire hazard.
- Potential economic loss due to fire.

Priority 2—Fire Suppression Zones. Consider the following in fire suppression zones.

- Human health and safety.
- Potential fire hazard.
- Potential economic loss due to fire.

Priority 3—Fire Management Zone-Ecosystem Maintenance Areas. Consider the following in fire management zones.

- Human health and safety.
- Potential fire hazard.
- Importance of resource values present.
- Potential economic loss due to fire.

Fire Management Zone-Vegetation Manipulation Areas. Priorities for implementation of fire plans are directly related to the priorities of the benefiting resource program and the cost of fire suppression.

SUPPORT

This section identifies the cumulative support needed to implement the plan. The support requests are relatively general but will be refined as annual work plans are prepared and approved. The support information is displayed in Table 18.

Table 18. Cumulative Support Needs

Support	Resource	Remarks
Appraisal	Terrestrial Habitat Management	Appraisals will be required for access needs identified in Table 15.
	Forest Management	Appraisals will be required for access needs identified in Table 15. Access will be required to Castle Peak, Hardscrabble, and the Naval Oil Shale Reserve to facilitate the commercial forestry program.
	Recreation Resource Management	Appraisals will be required for access needs identified in Table 15.
	Land Tenure Adjustments	Prior to FY89, appraisals will be required for all disposal tracts identified on Map 14.
Cadastral Survey	Minerals Management	Ongoing mineral disposal actions may require identification of public land boundaries.
		Coal tract delineation currently scheduled for FY87 will require cadastral support in the Hogback region.
		Cadastral support will be required for access needs identified in Table 15.
	Forest Management	Additional support may be required to locate public land boundaries associated with specific timber sales.
	Recreation Resource Management	Cadastral support will be required for access needs identified in Table 15.
	Wilderness	Cadastral support will be needed to identify designated wilderness boundaries.
	Land Tenure Adjustments	Tracts 30, 36, 109, 169, and 205 will require cadastral surveys prior to disposal.
		Cadastral surveys will be needed for identification of public land boundaries in the Elk Creek and Roaring Fork Valley areas to avoid potential conflicts and unauthorized use associated with anticipated private land development.
		Trespass occupancy resolution may additionally require cadastral support.
	Transportation Management	Cadastral surveys will be needed for easement locations.
Engineering	Critical Watersheds	Detention ponds and ditches proposed by the city of Glenwood Springs for the debris flow hazard zone will require review by the engineering staff.
	Aquatic Habitat Management	Engineering design and review will be required for habitat improvement structures identified in the appendixes.
	Terrestrial Habitat Management	Annually, specific projects including fences and water facilities will require engineering design and review.
	Livestock Grazing Management	Annually, specific projects including fences and water facilities will require engineering design and review.
	Forest Management	Engineering support will be required for road layout and design for timber access roads.
	Recreation Resource Management	Engineering support will be required for road layout and design for recreation access roads.
	Utility and Communication Facility Management	Annually, engineering reviews will be required for specific right-of-way actions.
	Transportation Management	Engineering survey and design will be required for all proposed easements identified on Map 16.
Fire Management	All Resources	Suppression forces will be required to implement decisions made for each of the fire management zones—fire exclusion, fire management, and fire suppression.
Mineral Surveys	Wilderness Management	Mineral surveys will be required in all wilderness study areas.
Water Rights	Water Quality	Some erosion control structures will require Colorado State Engineer permits, water rights, or both.
	Aquatic Habitat Management	Establishment of minimum streamflows and pool levels will require acquisition of water rights.
	Terrestrial Habitat Management	All BLM water developments will require acquisition of water rights.
	Livestock Grazing Management	All BLM water developments will require acquisition of water rights.

APPENDIXES

APPENDIX A

POSSIBLE MANAGEMENT PRACTICES

Following are lists of possible practices that could be used in the management of the various resources. These lists should not be considered comprehensive lists of all management practices.

WATER QUALITY

BACTERIA CONTROLS

1. Livestock and wildlife management:
   - reduced stocking
   - fencing
   - water developments
   - other range improvements
   - buffer zones in riparian areas
2. Construction of sanitary facilities in heavy use recreation areas

SEDIMENT AND SALINITY CONTROLS

1. Land treatment:
   - conversion of sagebrush to grass
   - ripping, pitting, contour furrows, and trenches
   - revegetation and rehabilitation of disturbed areas
   - rehabilitation or improvement of riparian areas
2. Control Structures:
   - water bars
   - gully plugs
   - water spreaders
   - retention/detention dams
   - gabions
   - jetties
3. Management Consideration:
   - proper livestock and wildlife grazing management
   - adequate drainage and protection on all roads and surface disturbances
   - timber management controls
   - fire management controls

TEMPERATURE AND DISSOLVED OXYGEN CONTROLS

- improve riparian vegetation
- increase base flow levels

WATER YIELD

BIG SAGEBRUSH ZONE

Water yield could be increased by converting shrub-type vegetation into grasses and forbs. Type conversion could be conducted by burning, plowing disking, or spraying. The technique selected would depend on conditions at the site.

Snowfence construction is a second feasible technique for increasing water yield from the sagebrush zone. Good fence sites have—

1. ridge crest locations,
2. upslope or level windward approach to the fence,
3. good orientation to prevailing drifting winds,
4. upslope or level terrain to the lee of the accumulation area,
5. at least 500 feet of contributing area,
6. little natural accumulation upwind of the fence, and
7. northerly to northeasterly exposure.

At good sites, from 60 to 120 feet of fence would be needed to produce an extra acre-foot of snowmelt, based on fences 10 to 12 feet tall, 40 percent fence density, and bottom gaps of 2 to 4 feet. At such sites, the melt season would be prolonged 1 to 3 weeks.

MOUNTAIN BRUSH ZONE

Water yield in the mountain brush zone can be increased by type conversion to grasses and forbs. Mountain brush control can be conducted through a number of approaches. It can be clearcut or it can be patch cut in order to preserve and enhance wildlife habitat. It can also be controlled by burning, cutting, or spraying. The effects from burning or cutting will be shorter lived than those from spraying due to rapid shrub regrowth.

PHREATOPHYTE INFESTATION AREAS

Management for maximum water yield in this zone would involve eradication of saltcedar and replacement with less water consumptive species, e.g., willows. Saltcedar can be removed by root-plowing or antitranspirant sprays.

MIXED CONIFER ZONE

Highest increases in water yield from the mixed conifer zone result when the forest is harvested in a system of small forest openings. An optimum pattern of snow accumulation results when openings are (1) less than eight tree heights in diameter, (2) interspersed so that they are five to eight tree heights apart, and (3) protected from wind. Maximum water yield results when approximately 40 percent of the watershed is occupied by these small openings and 60 percent is left uncut.

ASPEN ZONE

Water yield management in the aspen zone can be conducted either by type conversion to grassland or by patch cutting in a manner similar to that in the mixed conifer zone. In both the aspen and mixed conifer zones, windrowing slash can augment water yield by providing an area protected from the wind which enables snowdrifts to build up. The decision to windrow slash is an option that is open for water yield management but may not be economically feasible.

CRITICAL WATERSHED AREAS

Management practices that could be useful in protecting critical watersheds follow:

Access road construction

Alternative water source development

Brush control

Buffer strips

Contour furrows and trenches

Critical area planting

Debris basins

Dikes

Fencing

Firebreaks

Floodwater control structures

Grazing land mechanical treatments

Livestock exclusion

Planned grazing systems

Pond sealing or lining

Range seeding

Rehabilitation of disturbed areas

Rehabilitation or improvement of wetland areas

Spring development

Stocktrail and walkway development

Stream channel stabilization

Streambank protection

Tree planting

Trough or tank installation

Waterspreading

Wildlife upland habitat management

Wildlife watering facilities

Woodland improved harvesting

No development

Development with mitigation measures

AQUATIC HABITAT

HABITAT IMPROVEMENT MEASURES

Reservoir Flood Basins:

- Selective clearing
- Brush shelters
- Tire shelters
- Other fish shelters
- Exposed area planting
- Raised spillways

Reservoir Conservation Pools:

- Stage filling
- Fluctuation control
- Seasonal manipulation
- Minimum pools
- Aeration-destratification

Dam Discharge Systems:

- Low-level intakes
- Multi-level intakes
- Spillway deflectors
- Stilling basins

Streamflows, Riffles and Pools:

- Minimum flows
- Fluctuation control
- Reregulating dams
- Maximum flows
- Current deflectors
- Check dams
- Other instream devices
- Artificial meanders
- Isolated oxbows

POPULATION IMPROVEMENT MEASURES

Fish Propagation:

- Fish hatcheries
- Nursery and rearing ponds
- Nursery cove barriers
- Spawning bottom and marsh
- Spawning riffles
- Artificial spawning channels

Fish Passage:

- Trap and haul systems
- Fishways
- Conduits and culverts
- Turbine bypasses

Fish Stocking and Control:

- Fish stocking
- Fish screens
- Barrier dams
- Other control devices
- Fish eradication

GRAZING SYSTEMS

Livestock are selective grazers. The most palatable plants and the most accessible areas are grazed first and heaviest. Plants grazed heavily one year are usualy grazed heavily the following year, which leads to their gradual loss. This is also the trend for the preferred areas. When forage production of the most desirable plants falls below their needs, livestock will start grazing the less desirable species or areas, which leads to an ever enlarging area of range deterioration (Stoddart, Smith, and Box 1975; Hormay 1970). Grazing systems are prescribed in allotment management plans (AMPs) to regulate livestock grazing, to alleviate a particular problem, or give a desired result.

The harmful effects of selective grazing of preferred plants can be reduced by resting the range at appropriate intervals. An allotment is usually fenced into pastures to control pasture grazing and

pasture resting. A grazing formula is tailored for each allotment; the number of pastures and amount and timing of pasture grazing and resting are based on key forage plant physiological needs, existing range conditions, and potential for improvement.

Grazing treatments are the building blocks of the grazing formula or grazing system. Treatments specify periods of grazing use or rest from grazing for a specific reason during the year. Selected treatments are then chosen for each allotment, depending on the goal for the allotment, and applied to the pastures in a formula which becomes the system. The following descriptions of treatments includes dates of plant phenological occurrences. The dates used are typical for the resource area but could vary by allotment based on elevation, climate, and key species used. The letter designation of treatments is used only for differentiation and enumeration.

Treatment A

Treatment A consists of grazing a pasture for livestock production in the spring (5/01 to 6/15) and then resting the pasture for the remainder of the year. Grazing may extend to the flowering of key species (mid-July) to support livestock while allowing for treatment B in other pastures.

Treatment B

Treatment B consists of resting or deferring a pasture from livestock grazing until after the key species flower (mid-July) and then allowing it to be grazed by livestock to the end of the grazing season. By the time the pasture is grazed, plants have completed over half their food storage for the season and have extended roots. This is especially useful following treatment D, as it allows new seedlings time to develop grazing tolerance.

Treatment C

Treatment C consists of resting or deferring pasture from livestock grazing until after seedripe of the key grass and forbs species and then allowing it to be grazed by livestock to the end of the grazing season. Seedripe occurs from around the end of July to mid-August. By that time, winter carbohydrate storage should be adequate in most key plants and seed should have matured sufficiently to produce seedlings (the trampling by livestock would aid in the planting of seeds). With this treatment, growing season rest is provided for all plants.

Treatment D

Treatment D consists of resting a pasture from livestock grazing for the entire year. This allows the seeds to germinate and plants to store carbohydrate reserves, extend roots and increase vigor. It often follows treatment C to take advantage of seeds buried by trampling.

Treatment E

Treatment E consists of resting a pasture from livestock grazing during the growing season and then allowing it to be grazed by livestock during the winter and early spring. This is primarily winter sheep use on shrub rangelands.

Treatment F

Treatment F consists of grazing the pasture for the entire grazing period of the allotment.

REST-ROTATION GRAZING

Under a rest-rotation grazing system, grazing is deferred on various parts of an allotment during succeeding years, and the deferred parts are allowed complete rest for one or more years (Society for Range Management 1974). The allotment is divided into two or more pastures, usually with comparable grazing capacities. Each pasture is systematically grazed and rested, providing for livestock production and other resource values, while simultaneously maintaining or improving the vegetation cover, hence providing greater protection of the soil resource against wind and water erosion (Hormay 1970; Ratliff et al. 1972).

Rest rotation grazing systems may include several treatments depending upon the objectives for the allotment and the number of pastures. Rest-rotation grazing is a useful system to aid in the rehabilitation of depleted rangelands.

DEFERRED GRAZING

Deferred grazing is delay or discontinuance of grazing on an area for an adequate period of time to provide for plant reproduction, establishment of new plants, or restoration of vigor of existing plants (Society for Range Management 1974).

To be most effective, deferment should be used in conjunction with some other type of grazing

system, such as rotation to make a deferred-rotation system.

DEFERRED-ROTATION GRAZING

Deferred rotation is the discontinuance of grazing on various parts of an allotment in succeeding years. This allows each part or pasture to rest successively during the growing season to permit seed production, establishment of seedlings, and restoration of plant vigor (Society for Range Management 1974). One or more pastures are grazed during the spring, while the remaining one or more pastures are rested until after seed ripe of key species and then grazed. Deferred-rotation grazing differs from rest-rotation grazing in that there is no yearlong rest provided for any part of the allotment.

Deferred rotation grazing systems are useful for minor improvement or maintenance of range condition.

SEASONAL GRAZING

Seasonal grazing is restricted to a specific season (Society for Range Management 1974). Allotments are not necessarily divided into pastures but are grazed at a moderate rate during the same period of time each year, for instance, from 7/1 to 9/15 annually. Seasonal grazing could be proposed on allotments or pastures with a moderate stocking rate usually for short periods (2 to 3 weeks) during spring and longer periods for late summer and fall.

RANGE IMPROVEMENTS

VEGETATION MANIPULATIONS

Mechanical Plant Control

- Anchor chaining
- Cabling
- Bulldozing, disking

Herbicidal Control (ground and air)

Prescribed Burning

REVEGETATING DISTURBED AREAS

Reseeding

- Natural reseeding
- Broadcast reseeding
- Drilling
- Transplanting

RANGE FACILITIES

Water Developments

- Watersavers (catchments)
- Spring developments
- Reservoirs
- Pipeline systems
- Wells

Water Spreading or Concentrating

- Contour furrowing and trenching
- Pitting

Livestock Management Facilites

- Cattle guards
- Fences
- Corrals
- Stock trails

FOREST MANAGEMENT

PRODUCTIVE FOREST LAND SPECIES

Lodgepole Pine

- Clearcutting
- Shelterwood/group selection cutting

Spruce/Fir

Clearcutting

Shelterwood/group selection cutting

Douglas-Fir

Clearcutting

Shelterwood/selection cutting

Aspen

Clearcutting

Ponderosa Pine

Clearcutting

Shelterwood/selection cutting

WOODLAND SPECIES

Pinyon Pine and Juniper

Selection cutting

Seed tree cutting

Clearcutting

CULTURAL RESOURCES

PRESERVE

RESTORE OR STABILIZE

ANALYZE OR EXCAVATE—RECORD FOR ARCHIVES

DINTERPRET

PATROL

ACKNOWLEDGE AND USE DATA—NO FURTHER ACTION NECESSARY

UPGRADE DATA AND RESEARCH—EVALUATE

PROTECT AND MAINTAIN

DEMOLITION

FIRE MANAGEMENT

SUPPRESSION EQUIPMENT

Power Equipment

Plows

Rotary trencher

Pumper

Portable equipment

Fixed-wing support aircraft

Fixed-wing tactical aircraft

Helicopters

APPENDIX B

REQUIRED MANAGEMENT STIPULATIONS

These stipulations will be included in project designs and are considered standard operating procedures.

AIR QUALITY MANAGEMENT STIPULATIONS

1. Controlled burns and any other open burning will comply with BLM Manual Section 7723, *Air Quality Maintenance Requirements*, to minimize air quality impacts from resulting particulates.
2. Necessary stipulations protecting air quality from development will be included in leases, rights-of-way, and other BLM use permits.
3. All applicable local, state, and federal air quality policies, regulations, and statutes will be followed.

AQUATIC AND RIPARIAN HABITAT STIPULATIONS

1. Surface-disturbing activities will be restricted in or near riparian areas.
2. Fences should be constructed to minimize impact to significant riparian and aquatic habitat.
3. Equipment will not be allowed to move up or down stream channels. Heavy equipment will cross streams only at designated or constructed crossings with culverts and bridges designed to allow upstream migration of fish.
4. Fire retardent will not be dropped within 100 yards of any wetland riparian area. Drops of retardent will be made parallel to and not across drainages.
5. Fire lines, angular or perpendicular to a drainage, will not be allowed within 300 feet of a drainage to reduce soil movement into the drainage system.
6. If visitor use causes adverse impacts on critical riparian habitat, the visitor use will be reduced until the vegetative conditions are restored.

TERRESTRIAL HABITAT STIPULATIONS

1. Timber harvesting haul roads will be seasonally or permanently closed following timber harvesting if disturbance to big game becomes excessive.
2. Roadways, landings, and other heavily-disturbed sites will be reclaimed by establishing a ground cover.
3. Adequate snags for cavity-dwelling wildlife species will be left at forest edges, adjacent to aquatic and riparian areas, and near clearcut boundaries.
4. Buffers will be maintained around raptor nest sites.
5. In wooded areas, clearcuts will be restricted to 40 acres or less in size, limited in width to 400 yards, and irregular in shape to enhance edge effect. Adequate thermal and hiding cover for deer and elk will be retained in or adjacent to treatment areas.
6. Forty percent of an elk summer range will be maintained in a forested type with a 75 percent tree canopy.
7. Conifer and aspen harvesting will be prohibited in elk calving areas, and a buffer zone will be provided around these areas. Within the buffer zone, timber harvesting will be prohibited between May 1 and June 15.
8. Harvesting in aspen woodland will be prohibited from May 1 to July 15 unless on-site inspection reveals that fawning deer will not likely be disturbed.
9. Pinyon-juniper woodland harvesting occurring in crucial big game winter range will be restricted from January 16 to April 30 if determined to be detrimental to big game.
10. Powerlines will be constructed as described in *Suggested Practices for Raptor Protection or Powerlines—the State of the Art 1981.*
11. On reservoirs one-half surface acre or larger in size, fencing will be included to provide for development of aquatic and riparian habitat vegetation. Where fencing is included, water will be piped to drinking tanks or water gaps

provided to facilitate livestock watering. When feasible, islands will be included as part of the reservoir development.

12. Spring boxes and waterlines with wildlife escape ramps will be installed at all spring developments to provide water for livestock drinking tanks. Seep areas will be fenced at the spring source, and overflow water will be piped to small fenced retention ponds, where feasible, to create riparian habitat.

13. Normally, allotment boundary and road right-of-way fences will be four-strand barbed wire with spacing 16, 6, 8, and 12 inches. Interior pasture fences will generally be three-strand barbed wire with spacing 16, 10, and 12 inches unless special circumstances required a tighter fence. Wire spacings will be from the ground up.

14. The *Recommended Guidelines for the Maintenance of Sage Grouse Habitat* promulgated by the Western Association of State Game and Fish Commissioners will be followed when planning and conducting sagebrush control projects within occupied sage grouse habitat. Major points in the guidelines include consultation with the Division of Wildlife, protection of breeding complexes (and nesting areas), winter concentation areas, and design of control areas.

15. Areas receiving moderate to high soil disturbance during treatment or an understory ground cover less than 10 percent will be seeded with a mixture of grass, forb, and browse species. Livestock grazing will be prohibited on all seeded areas for two growing seasons.

16. New roads or trails leading to or on treatment areas normally will be physically closed following completion of the project. Activities occurring during the winter or early spring will be completed in the shortest period and number of seasons possible in critical deer and elk winter range.

17. Roads will be constructed as outlined in BLM Manual 9143.

APPENDIX C

RECREATION OPPORTUNITY SPECTRUM (ROS) CLASSES

Table C-1 describes each of the six ROS classes in terms of (1) experience opportunities, (2) setting opportunities, and (3) activity opportunities. These descriptors provide a general overview of the opportunities included in each class. These overview statements do not describe each class in detail but rather provide a point of departure from which the planner or manager can develop more precise prescriptions for each class based on specific situations encountered in field operations. The listing of activity opportunities is provided for illustrative purposes. It is not an all-inclusive list of activity opportunities on the public lands.

TABLE C-1. RECREATION OPPORTUNITY SPECTRUM CLASS DECRIPTIONS

Opportunity Class	Experience Opportunity	Setting Opportunity	Activity Opportunity
Primitive	Opportunity for isolation from the sights and sounds of man, to feel a part of the natural environment, to have a high degree of challenge and risk, and to use outdoor skills.	Area is characterized by essentially unmodified natural environment of fairly large size. Concentration of users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of man-induced restrictions and controls. Only facilities essential for resource protection are used. No facilities for comfort or convenience of the user are provided. Spacing of groups is informal and dispersed to minimize contacts between groups. Motorized use within the area is not permitted.	Camping, hiking, climbing, enjoying scenery or natural features, nature study, photography, spelunking, hunting (big game, small game, upland birds, waterfowl) ski touring and snowshoeing, swimming, diving (skin and scuba), fishing, canoeing, sailing, and river running (non-motorized craft).
Semi-Primitive Non-motorized	Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, is often evidence of other area users is present. On-site controls and restrictions may be present but are subtle. Facilities are provided only for the protection of resource values and the safety of users. Formal spacing of groups may be made to disperse use and limit contacts between groups. Motorized use is not permitted.	Camping, hiking, climbing, enjoying scenery or natural features, nature study, photography, spelunking, hunting (big game, small game, upland birds, waterfowl), ski touring and snowshoeing, swimming, diving (skin and scuba), fishing, canoeing, sailing, and river running (non-motorized craft).
Semi-Primitive Motorized	Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. Explicit opportunity to use motorized equipment while in the area.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, but often there is evidence of other area users present. On-site controls and restrictions may be present, but are subtle. Facilities are provided for the protection of resource values and safety of users only. Formal spacing of groups may be made to disperse use and limit contacts between groups. Motorized use is permitted.	Same as the above, plus the following: off-road vehicle use, four-wheel drive, dune buggy, dirt bike, snowmobile, power boating.

TABLE C-1. RECREATION OPPORTUNITY SPECTRUM CLASS DECRIPTIONS—Continued

Opportunity Class	Experience Opportunity	Setting Opportunity	Activity Opportunity
Roaded Natural	About equal opportunities for affiliation with other user groups and for isolation from sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities are not very important except in specific challenging activities. Practice of outdoor skills may be important. Opportunities for both motorized and non-motorized recreation are present.	Area is charcterized by a generally natural environment with moderate evidence of the sights and sounds of man. Resource modification and use practices are evident but harmonize with the natural environment. Concentration of users is low to moderate with facilities sometimes provided for group activity. On-site controls and restrictions offer a sense of security. Rustic facilities are provided for user convenience as well as for safety and resource protection. Conventional motorized use is provided for in construction standards and design of facilities.	All activities listed previously plus the following: picnicking, rock collecting, wood gathering, auto touring, downhill skiing, snowplay, ice skating, water skiing and other water sports, hand gliding, interpretive use, rustic resorts and organized camps.
Semi-Urban (also called Rural)	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. These factors are generally more important than the natural setting. Opportunities for wildland challenges. Risk taking and testing of outdoor skills are unimportant, except in those activities involving challenge and risk.	Area is characterized by substantially modified natural environment. Resource modification and use practices are obvious. Signs and sounds of man are readily evident and the concentration of users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for specific activities. Developed sites, roads and trails are designed for moderate to high use. Moderate densities are provided far away from developed sites. Facilities for intensive motorized use are available.	All activities used previously plus the following: competitive games, spectator sports, bicycling, jogging, outdoor concerts, and modern resorts.
Urban	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. Experiencing the natural environment and the use of outdoor skills are largely unimportant.	Area is characterized by a highly modified environment, although the background may have natural elements. Vegetation is often exotic and manicured. Soil may be protected by surfacing. Sights and sounds of man, on-site, predominate. Large numbers of users can be expected. Modern facilities are provided for the use and convenience of a large number of people. Controls and restrictions are obvious and numerous. Facilities for high intensity motor use and parking are present with forms of mass transit often available.	All activities listed previously.

APPENDIX D

CONSIDERATIONS USED IN DETERMINING LAND TENURE ADJUSTMENTS

RETENTION OR MULTIPLE USE ZONE

Definition

Tracts or combinations of tracts of public land or interests in land that are retained in public ownership and are managed under the principles of multiple-use and sustained yield.

Considerations

a. Well-blocked tracts of public land.
b. Tracts controlling access to other public lands (except for easements or patent reservations).
c. Areas where community expansion is not expected.
d. Manageable tracts (defined by such factors as access, resource values, compatibility with BLM mission).
e. Areas where public demand for disposal is minimal.
f. Areas valuable for resource programs and protection/management.
g. Areas identified in state and local governments' land-use plans as suitable for public ownership.
h. Areas not in conflict with existing planned intensive development.

Exceptions

a. Recreation and public purpose (R&PP) applications for patents.
b. Resolution of unintentional trespass both occupancy and agricultural.
c. Selection by the state of in-lieu lands.
d. Critical needs for energy development.
e. Lands critical for community expansion.
f. Mining claims to patent.
g. Land exchanges where the public value of the land that is acquired meet or exceed the public value of the land that is disposed of.
h. Land identified in future surveys, including omitted land, where one or more of the disposal zone considerations are met.
i. Land adjacent to existing agricultural, residential, industrial, or commercial land where public ownership interfaces with the logical development of that land.
j. Land containing crucial big game winter range or other resources whose values could best be managed by other federal or state agencies for public use.

COOPERATIVE MANAGEMENT (WITHIN RETENTION ZONE)

Definition

Tracts or combinations of tracts of public land or interests in lands which may or may not be interspersed with private, state, or other agency lands or interests in lands, where several agencies have varying responsibilities for management.

Considerations

a. Special withdrawals and reserves, i.e., Naval Oil Shale Reserve.
b. Broken land pattern with similar management goals among federal, state, or private owners.
c. Public land needed to support or add to other agency or state needs, i.e., Colorado River corridor.

Exceptions

a. Retention for full management responsibility by BLM or disposal through sale or exchange

could occur when cooperative management is no longer required.

b. Disposal through exchange could occur where all parties would benefit.

Methods for Cooperative Management

a. Cooperative agreements.
b. Memoranda of understanding.
c. Partial withdrawals.
d. Scenic easements.

DISPOSAL ZONE

Definition

Tracts or combinations of tracts of public land or interests in land that are suitable for conveyance out of federal ownership under existing laws and regulations.

Considerations

a. Isolated and small land parcels.
b. Difficult and expensive to manage (no access, cost benefit low) lands.
c. Tracts not suitable for management by another federal department or agency.
d. Tracts that would serve important public objectives that could not be achieved prudently and feasibly on land other than public land and which outweighed other public objectives that would be served by retaining in public ownership.

   Important public objectives include community needs: urban, suburban, and residential,

   Industrial and commercial,

   Agricultural,

   Recreation and other public purposes

e. Long-term public benefits weighed against more immediate or local benefits.
f. Tracts identified in state and local land-use plans as suitable for disposal.
g. Lands identified by public proposals.

Exceptions

a. Where fragile or unique resource values are known and the tract cannot be efficiently managed by another agency.
b. Where disposal would adversely affect management of adjacent lands by other agencies, i.e., Forest Service, State.
c. Where needs exist for R&PP leases, i.e., landfills, detention centers.
d. Where access to other public lands would be cut off (easements or patent reservations might be used).

Methods for Disposal

a. Sales.
b. State selection.
c. State and private exchange.
d. Recreation and public purpose.
e. Desert land entry.
f. Indian allotments.
g. Conveyance of federal minerals under private surface.
h. Color-of-title.
i. Carey Act.
j. Forest Service exchange or boundary adjustment.

GLOSSARY

GLOSSARY

ACRE-FOOT. The quantity of water or other material required to cover 1 acre to a depth of 1 foot or a volume of 43,560 cubic feet.

ACTIVE PREFERENCE. That portion of the total preference for which grazing use may be authorized. See also Total Preference.

ACTUAL USE. The use made of forage on any area by livestock and/or wildlife without reference to permitted or recommended use.

ALLOTMENT. An area designated and managed for grazing of livestock.

ALLOTTEE. Holder of a license or permit for grazing on an allotment. A permittee.

ALLOTMENT MANAGEMENT PLAN (AMP). A concisely written program of livestock grazing management for a specific grazing allotment.

ALLOWABLE HARVEST. The amount of forest products that can be harvested annually or periodically from a specified area over a stated period in accordance with the objectives of sustained-yield management. The allowable harvest includes all planned timber and fuelwood harvest volumes exclusive of such products as Christmas trees, branches, and cones.

ANIMAL UNIT (AU). One mature (1,000 pound) cow or the equivalent based upon average daily forage consumption of 26 pounds dry matter.

ANIMAL-UNIT MONTH (AUM). The amount of forage required by an animal unit for one month (800 pounds air dry forage for catttle or 160 pounds for domestic sheep). Tenure of one animal unit for one month.

BACKGROUND. The area visible from a travel route, use area, or other observer position usually from a minimum of 3 to 5 miles or a maximum of about 15 miles.

BROWSE. The part of a leaf and twig growth of shrubs, woody vines, and trees used by animals for consumption.

CATCHMENT. A structure built to collect and retain water.

CLEARCUTTING. An even-aged silvicultural system in which the old crop is cleared at one time; regeneration is generally natural through seeding from adjacent stands or from cone-bearing slash.

COMMERCIAL FOREST LAND. Forest land that is capable of yielding at least 20 cubic feet of wood per acre per year of commercial coniferous tree species. Lodgepole pine, Engelman spruce, Douglas-fir, and ponderosa pine comprise this group in the Glenwood Springs Resource area.

CONTRAST. The effect of a striking difference in the form, line, color, or texture of the landscape features within the area being viewed.

CRUCIAL WINTER RANGE. That portion of the winter range to which a wildlife species is confined during periods of heaviest snow cover.

CULTURAL MODIFICATION. Any man-caused change in the land or water form or vegetation or the addition of a structure that creates a visual contrast in the basic elements (form, line, color, texture) of the naturalistic character of a landscape.

CULTURAL RESOURCES. The fragile and nonrenewable remains of human activity, occupation, or endeavor that were of importance in human events.

EASEMENT. A right acquired by the United States to use or control private property for a road, trail, or other specified purpose.

ENDANGERED SPECIES. Any species in danger of extinction throughout all or a significant portion of its ranges.

EROSION CONDITION CLASS. A classification system for ranking soil erosion in increments of 20 points: 0-20 = stable; 21-40 = slight; 41-60 = moderate; 61-80 = critical; and 81-100 = severe.

EXISTING USE (livestock). The 5-year average licensed livestock use from 1975-1979.

FORAGE. All browse and herbaceous foods that are available to grazing animals.

FOREGROUND-MIDDLEGROUND. The area visible from a travel route, use area, or other observer position to a distance of 3 to 5 miles.

FOREST LAND. All land that supports trees having a 10 percent or greater crown closure, now or potentially. This includes woodland, commercial forest land, and noncommercial forest land, provided the minimum crown closure standard is met.

GRAZING PREFERENCE. See Total Preference.

GROUND WATER. The part of subsurface water that completely saturates the rocks and is under hydrostatic pressure.

HABITAT. A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are food, water, cover, and living space.

MITIGATION. The alleviation or lessening of possible adverse effects of an action on a resource by application of appropriate protective measures or adequate scientific study.

NATIONAL REGISTER OF HISTORIC PLACES. The official list, established by the Historic Preservation Act of 1966, of the nation's cultural resources worthy of preservation.

OFF-ROAD VEHICLE (ORV). Any motorized vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain.

OFF-ROAD VEHICLE DESIGNATIONS.

OPEN. Designated areas and trails where off-road vehicles may be operated (subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343).

LIMITED. Designated areas and trails where the use of off-road vehicles is subject to restrictions such as limiting the number or types or vehicles allowed, dates and times of use (seasonal restrictions), limiting use to existing roads and trails, or limiting use to designated roads and trails. Under the designated roads and trails designation, use would be allowed only on roads and trails that are signed for use. Combinations of restrictions are possible such as limiting use to certain types of vehicles during certain times of the year.

CLOSED. Designated areas and trails where the use of off-road vehicles is permanently or temporarily prohibited. Emergency use of vehicles is allowed.

PALEONTOLOGY. A science dealing with the life of past geological periods as known from fossil remains.

PRODUCTIVE FOREST LAND. Forest land that is capable of yielding at least 20 cubic feet of wood per acre per year of any tree species.

PUBLIC LAND. Land administered by the Bureau of Land Management.

RECREATION MANAGEMENT AREA. Area of public land that is the basic land unit for recreation management.

RECREATION OPPORTUNITY SPECTRUM (ROS). A continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities. (See Appendix E for description of specific classes.)

RIPARIAN. Situated on or pertaining to the bank of a river, stream, or other body of water. Normally used to refer to the plants of all types that grow rooted in the watertable of streams, ponds, and springs.

SCENIC QUALITY. The degree of harmony, contrast, and variety within a landscape.

STAND. An aggregation of trees or other growth occupying a specific area and sufficiently uniform in composition (species), age, arrangement, and condition to be distinguished from the forest or other growth on adjoining areas.

SUITABLE COMMERCIAL FOREST LAND. Commercial forest land determined to be suitable for timber production based

on the timber production capability classifications and multiple-use (resource management plan) constraints.

SUITABLE WOODLAND. Woodland having the ability to provide wood products and not withdrawn from such use.

SURFACE FACILITIES. All structures such as drill pads, buildings, well heads, and so forth, commonly used in the production of oil and gas.

SUSPENDED PREFERENCE. That portion of the total preference that is placed in a suspended category because the preference exceeds the present available livestock grazing capacity. Suspended non-use.

THREATENED SPECIES. Any species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

TIMBER PRODUCTION CAPABILITY CLASSIFICATION (TPCC). The process of partitioning forest land into major classes indicating relative suitability to provide timber on a sustained-yield basis.

TOTAL PREFERENCE. The total number of animal-unit months of livestock grazing on public land apportioned and attached to base property owned or controlled by a permittee or leasee.

UNALLOTTED ALLOTMENT. Allotment where a previous permittee has relinquished preference or BLM has cancelled preference. Not currently used by livestock.

UNSUITABLE COMMERCIAL FOREST LAND. Commercial forest land determined to be unsuitable for timber production based on the timber production capability classifications and multiple-use (resource management plan) constraints.

UNSUITABLE WOODLAND. Woodland withdrawn for uses other than production of wood products based on the timber production capability classifications and multiple-use (resource management plan) constraints.

VEGETATION MANIPULATION. Alteration of present vegetation by using fire, plowing, spraying, or other means to manipulate natural successional trends.

VEGETATION TYPE. A plant community with immediately distinguishable characteristics based upon and named after the apparent dominant plant species.

VISUAL RESOURCE. Land, water, vegetation, animal, and other visible features.

VISUAL RESOURCE MANAGEMENT (VRM). The planning, designing, and implementation of management objectives to provide acceptable levels of visual impacts for all BLM resource management activities.

VISUAL RESOURCE MANAGEMENT CLASSES. The degree of acceptable visual change within a characteristic landscape. A class is based upon the physical and sociological characteristics of any given homogeneous area and serves as a management objective.

CLASS I areas (preservation) provide for natural ecological changes only. This class includes primitive areas, some natural areas, some wild and scenic rivers, and other similar sites where landscape modification activities should be restricted.

CLASS II (retention of the landscape character) includes areas where changes in any of the basic elements (form, line, color, or texture) caused by management activity should not be evident in the characteristic landscape.

CLASS III (partial retention of the landscape character) includes areas where changes in the basic elements (form, line, color, or texture) caused by a management activity may be evident in the characteristic landscape. However, the changes should remain subordinate to the visual strength of the existing character.

CLASS IV (modification of the landscape character) includes areas where changes may subordinate the original composition and character; however, they should reflect what could be a natural occurrence within the characteristic landscape.

CLASS V (rehabilitation or enhancement of the landscape character) includes areas where change is needed. This class applies to areas where the landscape character has been so disturbed that rehabilitation is needed. This class would apply to areas where the quality class has been reduced because of unacceptable intrusions. It should be considered an interim short-term classification until one of the other classes can be reached through rehabilitation or enhancement.

URBAN. Extensively developed residential or industrial areas where VRM objectives are not assigned.

VISUAL SENSITIVITY. Degree of concern expressed by the user toward scenic quality and existing or proposed visual change in a particular characteristic landscape.

WILDERNESS. An area formally designated by Congress as a part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. The definition contained in Section 2(c) of the *Wilderness Act* (78 Stat. 891).

WILDERNESS STUDY AREA. A roadless area having wilderness characteristics and, thus, having potential as a wilderness.

WOODLAND. Land producing trees that are typically utilized as nonsawtimber products and sold in units other than board feet. Woodland is that forest land that is not included in the commerical forest land allowable cut base. Woodland can include both commercial and noncommercial forest land. Pinyon pine, juniper, aspen, and subalpine fir comprise the woodland type in the Glenwood Springs Resource Area.

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MAPS